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Ray Lyman Wilbur, Secretary

GEOLOGICAL SURVEY

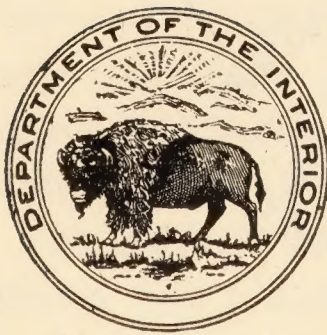
George Otis Smith, Director

Bulletin 823

BIBLIOGRAPHY
OF
NORTH AMERICAN GEOLOGY
1919-1928

BY

JOHN M. NICKLES



UNITED STATES
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INTRODUCTION

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By JOHN M. ZIEGLER

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SERIALS EXAMINED

- Academy of Natural Sciences of Philadelphia: Proceedings, vols. 70 (pt. 3)–79. Philadelphia, Pa.
- Academy of Science of St. Louis: Transactions, vols. 23 (no. 7)–26 (no. 2). St. Louis, Mo.
- Alabama Geological Survey: Bulletins 21–32, 34; Circulars 4, 5, 8; Museum Paper, nos. 5, 6; County Report, no. 1 (Clay County). Montgomery, Ala.
- Alberta, Scientific and Industrial Research Council: Annual Report, First–Eighth; Reports 1–22. Edmonton, Alberta.
- American Academy of Arts and Sciences: Proceedings, vols. 54 (no. 5)–63 (no. 11). Boston, Mass.
- American Association of Petroleum Geologists: Bulletin, vols. 3–12. Tulsa, Okla.
- American Institute of Mining Engineers: Bulletin, nos. 145–156; Technical Publication, nos. 1–157; Transactions, vols. 60–76. New York. See also Mining and Metallurgy.
- American Journal of Science, 4th ser., vols. 47–50; 5th ser., vols. 1–16. New Haven, Conn.
- American Mineralogist, vols. 4–13. Menasha, Wis.
- American Museum of Natural History; Bulletin, vols. 38–55; Memoirs, new ser., vol. 3, pts. 2, 3; American Museum Novitates, nos. 1–337. New York. See also Natural History.
- American Naturalist, vols. 53–62. New York.
- American Philosophical Society: Proceedings, vols. 58–67; Transactions, new ser., vol. 22, pts. 4, 5. Philadelphia, Pa.
- Annales de paléontologie, t. 10–17 (fasc. 1–2). Paris.
- Annales des mines, 11^e sér., t. 6–12; 12^e sér., t. 1–14. Paris.
- Annals and Magazine of Natural History, 9th ser., vols. 3–20; 10th ser., vols. 1, 2. London.
- Appalachia, vols. 14 (no. 4)–17 (no. 1). Boston, Mass.
- Arizona State Bureau of Mines: Bulletins 94, 96–99, 104–106, 113–117, 119, 122–126. Tucson, Ariz.
- Association of American Geographers: Annals, vols. 9–18. Albany, N. Y.
- Bernice Pauahi Bishop Museum: Bulletin, nos. 1–57; Memoirs, vols. 5, 6 (no. 1), 8–10; Occasional Papers, vols. 7, 8. Honolulu, Hawaiian Islands.
- Boston Society of Natural History: Proceedings, vols. 35–39; Memoirs, vol. 6, nos. 2–4, vol. 8, no. 4; Occasional Papers, vol. 5, pp. 1–249. Boston, Mass.
- Botanical Gazette, vols. 67–86. Chicago, Ill.
- British Columbia, Bureau of Mines: Annual Reports of Minister of Mines, 1918–1927. Victoria, B. C.
- Buffalo Society of Natural Science, vols. 12–14 (no. 1). Buffalo, New York.
- Bulletins of American Paleontology, nos. 31, 33–53. Ithaca, New York.
- California Academy of Sciences: Proceedings, 4th ser., vols. 9–17. San Francisco, Calif.
- California State Mining Bureau: Bulletins 79, 85–101. San Francisco, Calif.

- California, University of, Department of Geology: Bulletin, vols. 12-17; Seismographic Stations; Bulletin, nos. 15-20, vol. 2, nos. 1-15; Publications in Geography, vols. 2, 3 (no. 1). Berkeley, Calif.
- Canada, Geological Survey: Summary Reports 1917-1927; Memoirs 104, 107-154; Museum Bulletins 31-52. Ottawa, Ont.
- Canadian Alpine Journal, vols. 10-16. Banff, Alberta.
- Canadian Field Naturalist, vols. 33-42. Ottawa, Ont.
- Canadian Institute of Mining and Metallurgy: Transactions, vols. 23-30; Monthly Bulletin, nos. 81-200. Montreal, Quebec.
- Canadian Mining Journal, vols. 40-49. Gardenvale, Quebec.
- Carnegie Institution of Washington: Yearbook, nos. 17-27. Washington, D. C.
- Carnegie Museum: Annals, vols. 12 (no. 2)-19 (no. 1); Memoirs, vol. 7 (no. 6)-vol. 11 (no. 2). Pittsburgh, Pa.
- Centralblatt für Mineralogie, Geologie und Paläontologie, 1919-1928. Stuttgart, Germany.
- Coal Age, vols. 15-33. New York.
- Colorado, University of: Studies, vols. 13 (no. 1)-16 (no. 4). Boulder, Colo.
- Colorado Geological Survey: Bulletins 11, 15, 17-19, 21-28, 30-31. Denver, Colo.
- Colorado School of Mines: Magazine, vols. 9-18; Quarterly, vols. 14-23. Golden, Colo.
- Connecticut Academy of Arts and Sciences: Transactions, vols. 23-26; Memoirs, vols. 6, 7. New Haven, Conn.
- Connecticut State Geological and Natural History Survey: Bulletins 28-44. Hartford, Conn.
- Cuba, Dirección de Montes y Minas: Boletín de Minas, nos. 5-13. Habana, Cuba.
- Delaware County Institute of Science: Proceedings, vol. 8, no. 4, vol. 9, nos. 1, 2, 3. Media, Pa.
- Denison University, Scientific Laboratories; Bulletin, vols. 19-23. Granville, Ohio.
- Deutsche Geologische Gesellschaft: Zeitschrift, Bd. 69-80. Berlin, Germany.
- Economic Geology, vols. 14-23. Lancaster, Pa.
- Elisha Mitchell Scientific Society: Journal, vols. 34 (no. 4)-44 (no. 1). Chapel Hill, N. C.
- Engineering and Mining Journal, vols. 107-126. New York.
- Engineers' Club of Philadelphia: Proceedings, vols. 36-45. Philadelphia, Pa.
- Engineers' Society of Western Pennsylvania: Proceedings, vols. 35-44. Pittsburgh, Pa.
- Florida State Geological Survey: Annual Report, 12th-19th. Tallahassee, Fla.
- Franklin Institute: Journal, vols. 187-206. Philadelphia, Pa.
- Geographical Journal, vols. 53-72. London.
- Geographical Review, vols. 7-18. New York.
- Geographical Society of Philadelphia: Bulletin, vols. 17-26. Philadelphia, Pa.
- Geological Magazine, new ser., vols. 56-65. London.
- Geological Society of America: Bulletin, vols. 29-39. New York.
- Geological Society of London: Quarterly Journal, vols. 73-84. London.
- Geologists' Association, London: Proceedings, vols. 28-39. London.
- Georgia Geological Survey: Bulletins 35-43. Atlanta, Ga.
- Harvard College, Museum of Comparative Zoology: Bulletin, vols. 62-68; Memoirs, vols. 39 (nos. 3, 4), 43 (pts. 3, 4), 47-50 (nos. 1, 2), 51. Cambridge, Mass.
- Hawaiian Volcano Observatory: Monthly Bulletin, vols. 7-16 (no. 10). Honolulu, Hawaii.

- Idaho, Bureau of Mines and Geology: Bulletins 1-11, 13; Pamphlets 1-9, 11-31. Moscow, Idaho.
- Illinois Academy of Science: Transactions, vols. 9-20. Springfield, Ill.
- Illinois State Geological Survey: Bulletins 34, 36, 38, 40-55; Press Bulletin Series, Illinois Petroleum, nos. 1-16; Cooperative Mining Series, nos. 1-20, 23-26, 28-31; Report of Investigations, nos. 1-9, 11-16; Educational Series, nos. 1, 2. Springfield, Ill.
- Indiana, Department of Conservation, Division of Geology: Annual report, 1st-9th; Publications 6, 8, 42, 55, 72, 75. Indianapolis, Ind.
- Indiana Academy of Science: Proceedings, 1918-1927, vols. 28-37. Indianapolis, Ind.
- Institution of Mining and Metallurgy: Bulletin, nos. 172-291. London.
- Institution of Mining Engineers: Transactions, vols. 56-76 (pt. 3). Newcastle upon Tyne, England.
- Institution of Petroleum Technologists: Journal, vols. 5-14. London.
- Iowa Academy of Sciences: Proceedings, vols. 26-34. Des Moines, Iowa.
- Iowa Geological Survey: vols. 27-32, Annual Reports, 1916-1926. Des Moines, Iowa.
- Japan, Imperial Earthquake Investigation Committee: Bulletin, vols. 7-11. Tokyo, Japan.
- Johns Hopkins University: Studies in Geology, nos. 1-8. Baltimore, Md.
- Journal of Geography, vols. 18-27. Menasha, Wis.
- Journal of Geology, vols. 27-36. Chicago, Ill.
- Journal of Paleontology, vols. 1, 2. Chicago, Ill.
- Kansas Academy of Sciences: Transactions, vols. 29, 30. Topeka, Kans.
- Kansas State Geological Survey: Bulletins 5, 6 (pts. 1, 2, 5-7), 7-11, 13, 14; Circulars 1, 2; Mineral Resources Circular 1. Lawrence, Kans.
- Kansas University, Science Bulletin, vols. 11-18. Lawrence, Kans.
- Kentucky Academy of Science: Transactions, vols. 1, 2. Lexington, Ky.
- Kentucky Geological Survey: Fourth Series, vol. 3, pt. 3, vol. 4, vol. 5, pt. 2; Fifth Series, vol. 1, nos. 1-3; Sixth Series, vols. 1-30, 34; Bulletins 1-4; Pamphlets 1-14, 20, 21. Frankfort, Ky.
- Lake Superior Mining Institute: Proceedings, vols. 22-26. Ishpeming, Mich.
- Louisiana, Department of Conservation: Bulletins 8, 9, 11-14, 14 [15?]; Technical Paper no. 1. New Orleans, La.
- Maryland Geological Survey: vols. 11, 12; Cambrian and Ordovician; Silurian; Queen Annes County; Kent County; Talbot County. Baltimore, Md.
- Mazama, vols. 5 (no. 4)-7 (no. 2). Portland, Oreg.
- Meddelelser om Grönland, H. 37, Bd. 23 supplement, 40, 52, 54, 58, 59, 60-70. Copenhagen, Denmark.
- Mexico, Instituto Geológico: Anales, nos. 6-10, t. 2; Boletín, nos. 18, 33, 37-45; Folleto de Divulgación, nos. 19-30. Mexico City, D. F.
- Michigan Academy of Science, Arts, and Letters: Report, 20th-22d; Papers, vols. 1-8. Ann Arbor, Mich.
- Michigan Geological and Biological Survey: Publications 26-37. Lansing, Mich.
- Mining and Metallurgical Society of America: Bulletin, vols. 12-21, nos. 128-196. New York.
- Mining and Metallurgy (American Institute of Mining and Metallurgical Engineers), nos. 157-192, vols. 4-9. New York.
- Mining and Scientific Press, vols. 118-123. San Francisco, Calif.
- Mining Congress Journal, vols. 5-13. Washington, D. C.
- Mining Magazine, vols. 20-39. London.
- Minnesota Geological Survey: Bulletins 14-21. Minneapolis, Minn.

- Mississippi State Geological Survey: Bulletins 14-22; Seventh and Eighth Biennial Reports. Jackson, Miss.
- Missouri Bureau of Geology and Mines: Second Series, vols. 15-22; Biennial Reports. Jefferson City, Mo.
- National Academy of Sciences: Proceedings, vols. 5-14; Memoirs, vols. 14-22. Washington, D. C.
- National Geographic Magazine, vols. 35-54. Washington, D. C.
- Natural History; the Journal of the American Museum of Natural History, vols. 19-28. New York.
- Nature, vols. 102-122. London.
- Nautilus, vols. 32-42. Philadelphia, Pa.
- Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, 1917-1928; Beilage-Band, 42-60. Stuttgart, Germany.
- New Jersey Geological Survey: Bulletins 19-30. Trenton, N. J.
- New Mexico, State School of Mines: Bulletins 2-4. Socorro, N. Mex.
- New York Academy of Sciences: Annals, vols. 28-30. New York.
- New York State Museum Bulletin, nos. 203-277; Memoir 16; Handbooks 2, 3, 9. Albany, N. Y.
- North Carolina Geological and Economic Survey: Biennial Reports; Bulletins 28-35; Economic Papers 49-57; Circulars 2-11, 14, 16. Raleigh, N. C.
- North Dakota Geological Survey: Bulletins 1-6. Grand Forks, N. Dak.
- Nova Scotia Institute of Science: Proceedings and Transactions, vols. 14-17. Halifax, Nova Scotia.
- Ohio Academy of Science: Proceedings, vol. 7, pts. 3-10, vol. 8, pts. 1-4. Columbus, Ohio.
- Ohio Geological Survey: Fourth Series, Bulletins 21-27, 29-33. Columbus, Ohio.
- Ohio Journal of Science, vols. 19-28. Columbus, Ohio.
- Oklahoma Geological Survey: Bulletins 4, 12, 28, 31-39, 40 A-JJ, 41-43, 47; Circulars 10-12, 14, 16, 17. Norman, Okla.
- Ontario Department of Mines: Reports, 27th-37th, vols. 27-37 (pt. 2). Toronto, Ontario.
- Oregon Bureau of Mines and Geology: Biennial Reports; Mineral Resources of Oregon, vol. 3, nos. 1, 2. Corvallis, Oreg.
- Pacific Mining News of the Engineering and Mining Journal-Press, vol. 1, nos. 1-8. San Francisco, Calif.
- Paleontographica Americana, vol. 1, nos. 2-5. Ithaca, N. Y.
- Paleontologische Zeitschrift, Bd. 1-10. Berlin, Germany.
- Pan-American Geologist, vols. 37-50. Des Moines, Iowa.
- Pennsylvania Academy of Science: Proceedings, vol. 1. Harrisburg, Pa.
- Pennsylvania Geological Survey: Fourth Series; Bulletins 1-94 (mimeographed); Bulletins C 1, M 2-12; Topographic and Geologic Atlas, nos. 37, 65, 178, 206. Harrisburg, Pa.
- Portland Society of Natural History: Proceedings, vol. 3, pts. 2, 3. Portland, Me.
- Quebec (Province), Bureau of Mines: Reports on Mining Operations, 1918-1927. Quebec, Canada.
- Rochester Academy of Science: Proceedings, vols. 5-6 (no. 7). Rochester, N. Y.
- Royal Society of Canada: Proceedings and Transactions, 3d ser., vols. 12-22. Ottawa, Ont.
- Science, new ser., vols. 49-68. New York.
- Scientific Monthly, vols. 8-27, New York.
- Scientific Society of San Antonio: Annual Reports 15-18; Bulletin 4. San Antonio, Tex.

- Seismological Society of America: Bulletin, vols. 9-18 (no. 1). Stanford University, Calif.
- Sierra Club Bulletin, vols. 10 (no. 4)-13 (no. 1). San Francisco, Calif.
- Smithsonian Institution: Smithsonian Miscellaneous Collections, vols. 67 (nos. 5-9), 70-81 (nos. 1-6); Annual reports, 1919-1927. Washington, D. C.
- Sociedad científica "Antonio Alzate": Memorias y Revista, t. 35 (nos. 5-12), 37-49 (nos. 1-6). Mexico City, D. F.
- Société de géographie de Québec: Bulletin, vols. 13-22. Quebec, Canada.
- South Dakota Geological Survey: Reports of the State Geologist, 1918-1926; Bulletins 9-12; Circulars 4, 6-18, 20, 22, 23, 26-29. Vermilion, S. Dak.
- South Dakota School of Mines: Bulletin, nos. 13-15; Pamphlet no. 1. Rapid City, S. Dak.
- Southern California Academy of Sciences: Bulletin, vols. 18-27. Los Angeles, Calif.
- Staten Island Institute of Arts and Sciences: Proceedings, vols. 1-4. Staten Island, N. Y.
- Tennessee Academy of Science: Journal, vols. 1-4, Nashville, Tenn.
- Tennessee State Geological Survey: Resources of Tennessee, vol. 9; Bulletins 21-31, 33-36. Nashville, Tenn.
- Texas, University, Bureau of Economic Geology and Technology: Bulletins 1814, 1815, 1817, 1818, 1819, 1821, 1822, 1839, 1840, 1847, 1849, 1850, 1852, 1856, 1857, 1859, 1860, 1902, 1919, 1931, 1932, 1945, 2132, 2229, 2230, 2232, 2234, 2239, 2307, 2327, 2330, 2333, 2340, 2346, 2383, 2433, 2509, 2539, 2544, 2607, 2609, 2612, 2644, 2645, 2703, 2710, 2738, 2744, 2745, 2748, 2801, 2807, 2838. Austin, Tex.
- Toronto University, Studies: Geological Series, nos. 10-27. Toronto, Ontario.
- Torrey Botanical Club: Bulletin, vols. 46-55. Lancaster, Pa.
- Torreya, vols. 19-28. Lancaster, Pa.
- Tufts College Studies, vols. 4, 5 (Scientific series, nos. 39-45). Tufts College, Mass.
- United States Bureau of Mines: Bulletins 78, 95, 112, 117, 144, 150, 162, 165-169, 172-284, 286-289, 291-293, 295; Technical Papers 178, 203, 207-440. Washington, D. C.
- United States Geological Survey: Annual Report, 40th-49th; Professional Papers 107, 109, 111-113, 115-122, 124-141, 142 (pts.), 143, 145-153; Bulletins 664-666, 669, 678, 679, 682, 683, 686-802, 806 (A); Water-Supply Papers 424, 429, 436, 439, 440, 442-592, 596; Geologic Atlas of the United States, folios 208-221. Washington, D. C.
- United States National Museum: Bulletins 82, 100 (pts.), 102 (pts.), 103, 104, 106, 108-118, 121, 122, 124, 125, 131, 138; Proceedings, vols. 54-74. Washington, D. C.
- Vermont Geological Survey: Reports of the State Geologist, eleventh to sixteenth. Burlington, Vt.
- Virginia Geological Survey: Bulletins 11, 17, 19, 21, 22, 25, 26-31. Charlottesville, Va.
- Wagner Free Institute of Science: Transactions, vols. 9-11. Philadelphia, Pa.
- Washington Academy of Sciences: Journal, vols. 9-18. Washington, D. C.
- Washington Geological Survey: Bulletins 19, 20-23, 25-31. Olympia, Wash.
- Washington, University of, Publications in Geology, vol. 1, nos. 3, 4, vol. 2. Seattle, Wash.
- Western Society of Engineers: Journal, vols. 24-33. Chicago, Ill.
- West Virginia Academy of Science: Proceedings (W. Va. Univ. Bull.), vols. 1, 2. Morgantown, W. Va.

West Virginia Geological Survey: (County Reports)—Fayette County; Webster County; Nicholas County; Tucker County; Mineral and Grant Counties; Mercer, Monroe, and Summers Counties; Hampshire and Hardy Counties; Pendleton County. Morgantown, W. Va.

Wisconsin Academy of Science, Arts, and Letters: Transactions, vols. 19-23. Madison, Wis.

Wisconsin Geological and Natural History Survey: Biennial Reports, 11th-15th; Bulletins 52-69. Madison, Wis.

Wyoming, State Geologist: Biennial Report, 11th-14th; Bulletins 18-21. Cheyenne, Wyo.

Wyoming Historical and Geological Society: Proceedings and Collections, vols. 17, 18. Wilkes-Barre, Pa.

Zeitschrift für Gletscherkunde, Bd. 10-16, Berlin, Germany.

Zeitschrift für praktische Geologie, Jg. 23-36. Berlin, Germany.

Zeitschrift für Vulkanologie, Bd. 5-11. Berlin, Germany.

BIBLIOGRAPHY

Abbott, C. D.

1. The St. Lawrence earthquake of February 28, 1925; Seismological Soc. America, Bull., vol. 16, no. 2, pp. 133-145, 2 figs., June, 1926.

Abel, Othenio.

1. Geschichte und Methode der Rekonstruktion vorzeitlicher Wirbeltiere. viii, 327 pp., 255 figs., Jena, Gustav Fischer, 1925.
2. (and Cook, Harold J.). A preliminary study of early mammals in a new fauna from Colorado: Colorado Mus. Nat. Hist., Proc., vol. 5, no. 4, pp. 33-36, 4 figs., November 2, 1925.
3. Amerikafahrt; Eindrücke, Beobachtungen und Studien eines Naturforschers auf einer Reise nach Nordamerika und Westindien [includes various notes on the geology, physiography, and paleontology of the United States and Cuba]. 462 pp., 273 figs., Jena, Gustav Fischer, 1926.
4. Die Lebensspuren in der oberen Trias des Connecticuttales in Connecticut und Massachusetts: Zool.-Bot. Gesell. Wien, Verh., Jg. 1924-5, Bd. 74-75, pp. 145-150, 1926.
5. Die Geschichte der Equiden auf dem Boden Nordamerikas: Zool.-Bot. Gesell. Wien, Verh., Jg. 1924-5, Bd. 74-75, pp. 159-164, 1926.
6. *Allognathosuchus*, ein an die cheloniphage Nahrungsweise angepasster Krokodiltypus des nordamerikanischen Eozäns: Palaeont. Zeitschr., Bd. 9, H. 4, pp. 367-374, 1 fig., March, 1928.

Adams, Elliot Q. See Wherry, 1.

Adams, Frank Dawson. See also Wolff, J. E., 2.

1. Les gisements métallifères de la région nord du Canada dont l'exploitation reste à faire: Soc. géol. Belgique, Livre Jubilaire, 1874-1924, t. 1, pp. 379-384 [n. d., 1928?].
2. Origin of springs and rivers—an historical review (abstract with discussion by O. E. Meinzer): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 149-150, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 1, pp. 65-66, February, 1928. Fennia, 50, no. 1, 16 pp., 2 pls., Helsingfors, 1928.

Adams, George Irving.

1. The formation of bauxite in sink holes: Econ. Geology, vol. 18, no. 4, pp. 410-412, June-July, 1923.
2. Geology of Alabama; The crystalline rocks: Alabama, Geol. Survey, Spec. Rept. no. 14, pp. 25-40, 1 fig., 1 pl., 1926.
3. Bauxite deposits of the southern States: Econ. Geology, vol. 22, no. 6, pp. 615-620, 1 fig., September-October, 1927.
4. The occurrence and age of certain brown iron ores in Alabama and adjacent States: Econ. Geology, vol. 23, no. 1, pp. 85-92, 1 fig., January, 1928.
5. The course of the Tennessee River and the physiography of the southern Appalachian region: Jour. Geology, vol. 36, no. 6, pp. 481-493, 4 figs., August-September, 1928.

Adams, H. H.

1. Geological structure of Eastland and Stephens Counties, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 2, pp. 159-167, map, 1920.

Adams, John E.

1. Carbonic flora of Butler's Landing [Johnson County, Iowa] (abstract): Pan-Am. Geologist, vol. 46, no. 5, pp. 399-400, December, 1926.
2. Butler's Landing outlier and its fossil flora [Iowa]: Iowa Acad. Sci., Proc., 1926, vol. 33, pp. 177-178 [1927].

Adams, Leason H. See also American Geophysical Union; Williamson, 2.

1. The nature of the interior of the earth (abstract): Washington Acad. Sci., Jour., vol. 10, no. 17, pp. 498-499, October 19, 1920.
2. Note on the measurement of the density of minerals: Am. Mineralogist, vol. 6, no. 1, pp. 11-12, January, 1921.
3. A source of heat in volcanic activity (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 144-145, March 31, 1922.
4. A physical source of heat in springs: Jour. Geology, vol. 32, no. 3, pp. 191-194, April-May, 1924.
5. (and Washington, H. S.). The distribution of iron in meteorites and in the earth: Washington Acad. Sci., Jour., vol. 14, no. 14, pp. 333-340, 6 figs., August 19, 1924.
6. Temperatures at moderate depths within the earth: Washington Acad. Sci., Jour., vol. 14, no. 20, pp. 459-472, 2 figs., December 4, 1924.
7. (and Williamson, E. D.). The composition of the earth's interior: Smithsonian Inst., Ann. Rept., 1923, pp. 241-260, 6 figs., 1925.
8. (and Gibson, R. E.). The compressibilities of dunite and of basalt glass and their bearing on the composition of the earth: Nat. Acad. Sci., Proc., vol. 12, no. 5, pp. 275-283, May 15, 1926; Die Kompressibilität des Dunits und des basaltischen Glases und ihre Beziehungen zur Zusammensetzung der Erde: Gerlands Beiträge zur Geophysik, Bd. 15, H. 3, pp. 241-250, 1926.
9. The earth's crust and the discontinuity beneath it: Nat. Research Council, Bull., vol. 11, pt. 2, no. 56, pp. 29-30, November, 1926; abstract, Am. Jour. Sci., 5th ser., vol. 12, p. 272, September, 1926.
10. The critical extent of polar ice caps: Nat. Research Council, Bull. no. 61, pp. 31-32, July, 1927.

Adams, Leverett Allen.

1. A memoir on the phylogeny of the jaw muscles in recent and fossil vertebrates: New York Acad. Sci., Annals, vol. 28, pp. 51-166, 13 pls., 5 figs., January 15, 1919.
2. The shifting of the mammalian faunas as shown by the Pleistocene remains of Illinois: Illinois State Acad. Sci., Trans., vol. 16, pp. 140-144, 1923.
3. The significance of fossil footprints: Illinois State Acad. Sci., Trans., vol. 18, pp. 172-177, 1925.
4. (and Martin, H. T.). Pliocene urodeles in western Kansas: Science, new ser., vol. 67, pp. 59-60, July 20, 1928.

Adams, Sidney F.

1. A replacement of wood by dolomite: Jour. Geology, vol. 28, no. 4, pp. 356-365, 4 figs., May-June, 1920.
2. A microscopic study of vein quartz: Econ. Geology, vol. 15, no. 8, pp. 623-664, 8 pls., December, 1920.

Addington, Arch R.

1. A special case of drainage adjustment near the Illinoian drift margin in southeastern Owen County, Indiana: *Indiana Acad. Sci., Proc.*, vol. 35, pp. 125-130, 5 figs., 1926.
2. Porter's Cave and recent drainage adjustments in its vicinity: *Indiana Acad. Sci., Proc.*, vol. 36, pp. 107-116, 6 figs., 1927.
3. A preliminary report upon the survey of Indiana caves with special reference to Marengo Cave: *Indiana, Dept. Conservation, Eighth Ann. Rept.*, pp. 21-31, 1 fig., 1927.
4. The Litten natural bridges and closely associated phenomena, eastern Owen County, Indiana: *Indiana Acad. Sci., Proc.*, vol. 37, pp. 143-151, 3 figs., 1928.
5. A preliminary report of investigations concerning subterranean drainage phenomena during the summer of 1927: *Indiana, Dept. Conservation, Ninth Ann. Rept.*, pp. 9-18, 1928.

Adkins, Walter Scott. See also Lonsdale, 8; Winton, W. M., 1.

1. (and Winton, W. M.). Paleontological correlation of the Fredericksburg and Washita formations in north Texas: *Texas, Univ., Bull.* no. 1945, 128 pp., 22 pls., 6 figs., August 10, 1919 [pub. January, 1920].
2. The Weno and Pawpaw formations of the Texas Comanchean: *Texas, Univ., Bull.* no. 1856, pp. 1-172, 13 figs., 11 pls., October 5, 1918 [1920].
3. Geology and mineral resources of McLennan County: *Texas, Univ., Bull.* no. 2340, 202 pp., 10 figs., 4 pls. (incl. map), January, 1924.
4. The geology and mineral resources of the Fort Stockton quadrangle: *Texas, Univ., Bull.* no. 2738, 166 pp., 8 figs., 6 pls. (incl. map), October 8, 1927.
5. Handbook of Cretaceous fossils: *Texas, Univ., Bull.* no. 2838, 385 pp., 37 pls., 1928.

Agar, William MacDonough.

1. The minerals of St. Lawrence, Jefferson, and Lewis counties, New York. *Am. Mineralogist*, vol. 6, no. 10, pp. 148-153, no. 11, pp. 158-164, 1 fig., October and November, 1921.
2. Contact metamorphism in the western Adirondacks: *Am. Philos. Soc., Proc.*, vol. 62, no. 3, pp. 95-174, 2 figs., 9 pls., 1923.
3. The minerals of the intermediate zone, Butte, Montana: *Econ. Geology*, vol. 21, no. 7, pp. 695-707, 5 figs., November, 1926.
4. The geology of Shepaug Aqueduct Tunnel, Litchfield County, Connecticut: *Connecticut, State Geol. and Nat. Hist. Survey, Bull.* no. 40, 38 pp., 3 figs., 8 pls., 2 maps, 1927.

Aguerrevere, Santiago E. See Schenck, 2.

Aguilar, Ángel.

1. El petróleo en nuestras costas del Pacífico: *Boletín Minero*, t. 7, nos. 3-4, pp. 272-275, March-April, 1919.

Aguilera, E.

1. Reseña sobre la industria minera en la provincia de Oriente durante el año 1923 á 1924: *Cuba, Dirección de montes y minas, Bol. minas*, no. 8, pp. 68-70, August, 1925.

Aguilera, José Guadalupe.

1. The Sonora earthquake of 1887: *Seismol. Soc. America, Bull.*, vol. 10, no. 1, pp. 31-44, March, 1920.

Albertson, Maurice Merton.

1. Isostatic adjustments on a minor scale in their relation to oil domes: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1055, 3 pp., 1 fig., February, 1921; *Trans.*, vol. 65, pp. 418-420, 1 fig., 1921. Abstract, *Mining and Metallurgy*, no. 170, pp. 38-39, February, 1921.
2. Possible explanation of the large initial production of some wells of the Haynesville field, Louisiana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 3, pp. 295-296, May-June, 1923.

Alcalá, Maximino.

1. Informe preliminar acerca de la hidrología subterránea de las cuencas de los Ríos Magdalena y Altar en el Estado de Sonora: Mexico, *Inst. geol., Foll. de divulg.*, no. 25, 25 pp., February, 1927.
2. Hidrología subterránea de la ciudad de Zacatecas: Mexico, *Inst. geol., Foll. de divulg.*, no. 27, 15 pp., June, 1927.

Alcock, Frederick James. See also Bingay, 1.

1. Reed-File lakes area, Manitoba: Canada, *Geol. Survey, Summ. Rept.*, 1918, pt. D, pp. 6-8, 1919.
2. Wekusko Lake area, Manitoba: Canada, *Geol. Survey, Summ. Rept.*, 1918, pt. D, pp. 9-10, 1920.
3. The Reed-Wekusko map area, northern Manitoba: Canada, *Geol. Survey, Mem.* 119, 47 pp., 6 pls., 2 maps, 1920.
4. Cross-Pipestone map area, Manitoba: Canada, *Geol. Survey, Summ. Rept.*, 1919, pt. D, pp. 11-18, 1920.
5. The Athabaska series: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 25-32, July, 1920.
6. The origin of Lake Athabaska: *Geog. Rev.*, vol. 10, no. 6, pp. 400-407, 8 figs., December, 1920.
7. The norite rocks of the Lake Athabasca region: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 14, sec. 4, pp. 25-29, 1 fig., 1921.
8. A local occurrence of differentiation in granite on the Churchill River, northern Manitoba, Canada: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 14, sec. 4, pp. 31-33, 1 fig., 1921.
9. Ospwagan Lake-Burntwood River area, northern Manitoba: Canada, *Geol. Survey, Summ. Rept.*, 1920, pt. C, pp. 1-6, map, 1921.
10. Rat River route from Threepoint Lake to southern Indian Lake, Manitoba: Canada, *Geol. Survey, Summ. Rept.*, 1920, pt. C, pp. 6-12, map, 1921.
11. The terminal moraine of the Seal-Churchill divide [Manitoba]: Canada, *Geol. Survey, Summ. Rept.*, 1920, pt. C, pp. 13-18, 2 figs., map, 1921.
12. The occurrence of gold at Herb Lake [Manitoba]: *Canadian Inst. Min. and Met., Monthly Bull.* no. 107, pp. 210-215, March, 1921.
13. (and Bruce, E. L.). Pre-Cambrian rocks of Manitoba: *Geol. Soc. America, Bull.*, vol. 32, no. 2, pp. 267-292, 3 figs., June 30, 1921.
14. Geology of Lemieux Township, Gaspé County, Quebec: Canada, *Geol. Survey, Summ. Rept.*, 1921, pt. D, pp. 71-96, 2 figs., 3 pls., 2 maps, 1922.
15. Flinflon map area, Manitoba and Saskatchewan: Canada, *Geol. Survey, Summ. Rept.*, 1922, pt. C, pp. 1-36, 6 figs., 3 pls., 2 maps, 1923.
16. Copper prospects in Gaspé Peninsula, Quebec: Canada, *Geol. Survey, Summ. Rept.*, 1923, pt. C 2, pp. 1-12, 4 figs., 1924; Quebec, *Dept. Colonization . . . Report on Mining Operations . . .* 1924, pp. 29-39, 2 figs., 1925.

Alcock, Frederick James—Continued.

17. Across Gaspé: *Geog. Rev.*, vol. 14, no. 2, pp. 197–214, 20 figs., April, 1924.
18. The Pas mineral belt [Saskatchewan–Manitoba]: *Canadian Min. Jour.*, vol. 45, no. 30, pp. 713–715, 3 figs., July 30, 1924.
19. The mineral deposits of Gaspé [Quebec]: *Canadian Min. Jour.*, vol. 45, no. 41, pp. 1000–1003, 4 figs., October 10, 1924.
20. Mount Albert map area, Quebec: Canada, *Geol. Survey*, Mem. 144, 75 pp., 5 figs., 6 pls., map, 1926.
21. Shickshock Mountains, central Gaspé, Quebec: Canada, *Geol. Survey*, *Summ. Rept.*, 1924, pt. C, pp. 127–133, 2 figs., 2 pls., map, 1926.
22. Geology of Mount Serpentine, Gaspé, Quebec: Canada, *Geol. Survey*, *Summ. Rept.*, 1924, pt. C, pp. 134–141, 1 fig., 1926.
23. Lead and zinc in eastern Canada: *Mining and Metallurgy*, vol. 7, no. 230, pp. 51–56, 4 figs., February, 1926; *Canadian Min. Jour.*, vol. 47, no. 19, pp. 488–492, May 7, 1926.
24. Memorial of William McInnes: *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 96–99, 1 pl. (portr.), March 30, 1926.
25. Geology of the Great Lakes area: *Canada Yearbook*, 1925, p. 24, Canada, Dominion Bureau of Statistics, General Statistics Branch, Ottawa, 1926.
26. Recent developments in Gaspé Peninsula [Quebec]: *Canadian Min. and Met. Bull.*, no. 191, pp. 367–385, 10 figs., March, 1928.
27. Rivers of Gaspé: *Geol. Soc. America, Bull.*, vol. 39, no. 2, pp. 403–420, 8 figs., 3 pls., June, 1928; abstract, *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 158, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 70, February, 1928.
28. Gaspé Peninsula, its geology and mineral possibilities: Quebec, Dept. Colonization, Mines and Fisheries, *Report on Mining Operations*, 1927, pp. 162–181, 2 figs., 3 pls., 1928.
29. Zinc-lead field of central Gaspé, Quebec: Canada, *Geol. Survey*, *Summ. Rept.*, 1927, pt. C, pp. 27–46, map, 1928.

Alden, William Clinton. See also Atwood, 4; Bretz, 14; Kay, 10; Osborn, 19; Salisbury, 2; Winchester, 1.

1. Rate of movement in glaciers of Glacier National Park: *Science*, new ser., vol. 57, p. 268, March 2, 1923.
2. The physical features of central Massachusetts: U. S. *Geol. Survey, Bull.* 760, pp. 13–105, 11 figs., 17 pls., December 16, 1924.
3. Physiographic development of the northern Great Plains: *Geol. Soc. America, Bull.*, vol. 35, no. 3, pp. 385–423, 12 pls. (incl. map), September 30, 1924; abstract, no. 1, pp. 74–75, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, p. 140, March, 1924.
4. Pre-Wisconsin glaciation of northern Rocky Mountains (abstract): *Pan-Am. Geologist*, vol. 43, no. 5, pp. 371–372, June, 1925.
5. Glaciation and physiography of Wind River Mountains, Wyoming (abstract): *Washington Acad. Sci., Jour.*, vol. 16, no. 3, p. 73, February 4, 1926.
6. The Gros Ventre landslide of June, 1925 [Wyoming] (abstract): *Washington Acad. Sci., Jour.*, vol. 17, no. 5, p. 123, March 4, 1927.
7. Memorial of Willis Thomas Lee: *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 70–93, portr., March 30, 1927.
8. Landslide and flood at Gros Ventre, Wyoming: *Am. Inst. Min. and Met. Eng., Tech. Pub.* no. 140, 14 pp., 11 figs., October, 1928; *Trans.*, vol. 76, pp. 347–361, 11 figs., 1928; abstract. *Mining and Metallurgy*, vol. 9, no. 262, p. 465, October, 1928.

Alderson, Victor Clifton.

1. The oil shale industry: Colorado School of Mines, Quart., vol. 14, no. 4, pp. 3-15, October, 1919.
2. The oil shale industry. 175 pp., 15 pls., New York, Frederick A. Stokes Company, 1920.
3. The oil shale of Kentucky: Colorado School of Mines, Quart., vol. 17, no. 4, pp. 3-15, 10 figs., October, 1922.
4. Colorado oil shale: Colorado School of Mines, Quart., vol. 20, no. 2, 53 pp., illus., April, 1925.
5. Jefferisite: Colorado School of Mines, Circular of Information, 4 pp. [n. d., 1925?].
6. Oil shale: Inst. Petroleum Technologists, Jour., vol. 12, no. 57, pp. 366-374, August, 1926.

Aldrich, H. R.

1. The dip needle in stratigraphy: Mining and Metallurgy, no. 163, p. 33, July, 1920 (abstract); Am. Inst. Min. and Met. Eng., Trans., vol. 66, pp. 49-63, 9 figs., 1922 (with discussion by W. O. Hotchkiss, Carl Zapffe, and Emil A. Kronquist); [preprint no. 998], 7 pp., 4 figs., 1920; [preprint] no. 1088, p. 12, August, 1921; discussion, no. 1038, pp. 18-24, 5 figs., January, 1921.
2. Magnetic surveying on the copper-bearing rocks of Wisconsin: Econ. Geology, vol. 18, no. 6, pp. 562-574, 2 figs., September, 1923.

Aldrich, Truman Heminway. See also Gardner, J. A., 1.

1. New Eocene species from Alabama: Bull. American Paleontology, vol. 9, no. 37, 32 pp., 3 pls., March 6, 1921.
2. Notes on the Clinton group in Alabama: Am. Inst. Min. and Met. Eng., Trans., vol. 71, pp. 304-307, 1 fig., 1925; also [preprint] no. 1375, 1924; abstract, Mining and Metallurgy, vol. 5, no. 215, pp. 547-548, November, 1924.

Alexander, A. Emil.

1. Devonian concretions of western and central New York: Science, new ser., vol. 68, p. 85, July 27, 1928.

Alexander, C. I.

1. Micrology of the upper Fredericksburg and lower Washita formations: Texas, Univ., Bull. no. 2544, pp. 65-67, 2 pls., 1925.
2. The stratigraphic range of the Cretaceous ostracod *Bairdia subdeltoidea* and its allies: Jour. Paleontology, vol. 1, no. 1, pp. 29-33, 1 pl., July, 1927.
3. The time range of the foraminiferan, *Flabellammina alexanderi*, in the Lower Cretaceous of north Texas: Jour. Paleontology, vol. 2, no. 1, pp. 43-44, 2 figs., March, 1928.

Alexander, W. P.

1. Trips into the geologic past of western New York: Hobbies (Buffalo Soc. Nat. Hist.), vol. 7, no. 2, pp. 3-18, June, 1926.

Allan, John Andrew.

1. Geology of the Swan Hills in Lesser Slave Lake district, Alberta: Canada, Geol. Survey, Summ. Rept., 1918, pt. C, pp. 7-13, 1919.
2. First annual report on the mineral resources of Alberta. 103 pp., Edmonton, 1920.

Allan, John Andrew—Continued.

3. Salt explorations at Fort McMurray [Alberta]; Alberta, Advisory Council of Scientific and Industrial Research, First Ann. Rept., pp. 33–34, 1921. .
4. Second annual report on the mineral resources of Alberta, 1920. 138, 14 pp., map, Edmonton, 1921.
5. Mineral possibilities in Alberta and adjoining territory: Canadian Inst. Min. and Met., Monthly Bull. no. 109, pp. 438–448, May, 1921; Canadian Min. Jour., vol. 42, no. 19, pp. 379–382, May 13, 1921.
6. Geological reconnaissance in Alberta during 1921: Alberta, Scientific and Industrial Research Council, 2d Ann. Rept., pp. 34–42, 1922.
7. Geology of the Drumheller coal field, Alberta, Canada: Third annual report on the mineral resources of Alberta, 1921: Alberta, Scient. and Industrial Research Council, Rept. no. 4, 72, 5 pp., 17 pls., Edmonton, 1922.
8. Geological investigations during 1922: Alberta, Scient. and Industrial Research Council, Third Ann. Rept., pp. 38–41, 1923.
9. (and Rutherford, Ralph L.). Saunders Creek and Nordegg coal basins, Alberta, Canada: Alberta, Scientific and Industrial Research Council, Rept. no. 6 (4th Ann. Rept. Mineral Resources of Alberta, pt. 1), 66 pp., 9 pls., map, 1923.
10. (and Cameron, Alan E.). An occurrence of iron on Lake Athabaska: Alberta, Scientific and Industrial Research Council, Rept. no. 7 (4th Ann. Rept. Mineral Resources of Alberta, pt. 2), 33 pp., 7 pls., 2 maps, 1923.
11. Geological investigations during 1923: Alberta, Scientific and Industrial Research Council, Fourth Ann. Rept., 1923, pp. 46–58, 1924.
12. Some problems relating to the Cretaceous and Jurassic stratigraphy in Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 17, sec. 4, pp. 117–124, May, 1923.
13. (and Rutherford, Ralph L.). Geology along the Blackstone, Brazeau, and Pembina rivers in the foothills belt, Alberta: Alberta, Scientific and Industrial Research Council, Rept. no. 9, 53 pp., 8 pls. (incl. map), 1924.
14. Geological map of the Province of Alberta: Alberta, Scientific and Industrial Research Council, 1925. Scale, 1 inch=25 miles.
15. Geological investigations during 1924: Alberta, Scientific and Industrial Research Council, 5th Ann. Rept. (Rept. no. 12), pp. 32–45, 1925.
16. (and Sanderson, J. O.). An Upper Cretaceous disconformity in Alberta (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 161, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 155, March 1925.
17. Geology of Alberta coal: Canadian Inst. Min. and Met., Bull., no. 156, pp. 387–405, 10 figs., April, 1925; Trans., vol. 28, pp. 231–251, 10 figs. [1926].
18. [Report of the] Geological Survey division: Alberta, Scientific and Industrial Research Council, 6th Ann. Rept., 1925 (Rept. no. 16), pp. 32–46, 1 fig., 1926.
19. Ice crystal markings: Am. Jour. Sci., 5th ser., vol. 11, pp. 494–500, 10 figs., June, 1926.
20. (and Rutherford, Ralph L.). Paskapoo fossil plant localities of Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, sec. 4, pp. 183–186, 1 pl., 1926.

Allan, John Andrew—Continued.

21. [Report of] Geological Survey division; natural gas: Alberta, Sci. and Ind. Research Council, 7th Ann. Rept., 1926, Rept. no. 20, pp. 28-37, 1927.
 22. Geological Survey division [report]: Alberta, Sci. and Industrial Research Council, Eighth Ann. Rept., 1927, pp. 36-41, 1928.
- Allen, Eugene Thomas. See also Day, A. L., 11, 15; Merwin, 5; Wright, F. E., 9.
1. Chemical aspects of volcanism with a collection of the analyses of volcanic gases: Franklin Inst., Jour., vol. 193, no. 1, pp. 29-80, January, 1922.
 2. (and Zies, E. G.). A chemical study of the fumaroles of the Katmai region: Nat. Geog. Soc., Contributed Tech. Papers, Katmai series no. 2, pp. 75-155, illus., 1923.
 3. Further evidence of the nature of hot springs (abstract): Washington Acad. Sci., Jour., vol. 16, no. 3, p. 74, February 4, 1926.
 4. (and Day, Arthur L.). Steam wells and other activity at "The Geysers," California: Carnegie Inst. Washington, Pub. no. 378, 106 pp., 34 figs., 1 pl. (map), 1927.
 5. The work of the Geophysical Laboratory on hot springs: Nat. Research Council, Bull. no. 61, pp. 255-259, July, 1927.
 6. (and Day, Arthur L.). Natural steam power in California [The Geysers]: Nature, vol. 122, pp. 17-18, 27-28, July 7, 1928.
 7. The classification of the hot areas in the Yellowstone Park and the causes of their development (abstract): Washington Acad. Sci., Jour., vol. 18, no. 19, p. 511, November 19, 1928.

Allen, Glover Morrill.

1. Bison remains from New England: Jour. Mammalogy, vol. 1, no. 4 pp. 161-164, 3 figs., August, 1920.
2. A new fossil cetacean [*Archaeodelphis*]: Harvard Coll., Mus. Comp. Zoology, Bull., vol. 65, no. 1, pp. 1-14, 3 figs., 1 pl., August, 1921.
3. Fossil cetaceans from the Florida phosphate beds: Jour. Mammalogy, vol. 2, no. 3, pp. 144-159, 1 fig., 4 pls., August, 1921.
4. Fossil mammals from South Carolina: Harvard Coll., Mus. Comp. Zoology, Bull., vol. 67, no. 14, pp. 447-467, 5 pls., July, 1926.

Allen, Herman Camp.

1. (and Lyder, E. E.). A chemical survey of the natural gases of Kansas and Oklahoma: Kansas, Univ., Bull., vol. 19, no. 1, Engineering Bull. no. 11, Division of State Chemical Research, Bull. no. 3, 101 pp., 10 figs., 1919.
2. The chemistry of Kansas coal: Kansas, Univ., Bull., vol. 26, no. 5, Division of Chemical Research, Bull. no. 4, pp. 127-202, 3 figs., March 1, 1925.

Allen, Maxwell W.

1. Some remarks concerning Pacific coast earthquakes: Seismological Soc. America, Bull., vol. 15, no. 2, pp. 128-139, June, 1925.

Allen, Milton Arthur. See also Butler, G. M., 1, 2.

1. (and Butler, G. M.). Barytes: Arizona, Univ., Bur. Mines, Bull. no. 99, 18 pp., 1919.
2. The southern section of the Amole mining district: Arizona, Univ., Bull. no. 106 (geol. ser. no. 2), pp. 19-25, 4 figs., May, 1920.
3. (and Butler, G. M.). Asbestos: Arizona Bur. Mines, Bull. no. 113, 31 pp., 1 fig., 1921.

Allen, Milton Arthur—Continued.

4. (and Butler, G. M.). Fluorspar: Arizona Bur. Mines, Bull. no. 114, 19 pp., July 15, 1921.
5. (and Butler, G. M.). Vanadium: Arizona Bur. Mines, Bull. no. 115, 23 pp., September 1, 1921.
6. Arizona gold placers: Arizona Bur. Mines, Bull. no. 118, 24 pp., 1 fig., January 15, 1922.

Allen, Rolland Crater. See also Lane, 2; Tanton, 17.

1. Mineral resources of Michigan with statistical tables of production and value of mineral products for 1917 and prior years: Michigan Geol. and Biol. Survey, Pub. 27 (Geol. ser. 22), 225 pp., 2 pls. (incl. map), 1918; . . . for 1918 . . .: Pub. 29 (Geol. ser. 24), 214 pp., 4 figs., 1920.
2. Correlation of formations of Huronian group in Michigan: Am. Inst. Min. and Met. Eng., Bull. no. 135, pp. 2579–2594, 1 fig., September, 1919; Trans., vol. 63, pp. 188–212, 1 fig., 1920. Discussion by W. O. Hotchkiss, E. F. Burchard, Carl Zapffe, and E. C. Harder, Mining and Metallurgy, no. 157, sec. 12, pp. 1–6, January, 1920.
3. (and Martin, Helen M.). A brief history of the Geological and Biological Survey of Michigan; 1837 to 1872, by R. C. Allen; 1872 to 1920, by Helen M. Martin: Michigan History Mag., vol. 6, no. 4, pp. 675–750, 3 pls. (portraits), 1922.
4. (and Martin, Helen M.). An abstract of "A history of the Michigan Geological and Biological Survey": Michigan Acad. Sci., Papers, vol. 1, pp. 224–247, 2 pls., 1923.

Allen, Victor T.

1. Anauxite from the Ione formation of California: Am. Mineralogist, vol. 13, no. 4, pp. 145–152, 1 fig., April, 1928.
2. Ione formation of California (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 313, May, 1928.

Allende, Roque. See also Babé, 1; Calvache, 4.

1. Estudio técnico de los yacimientos minerales de Isla de Pinos: Cuba, Dirección de montes y minas, Bol. minas, no. 7, pp. 51–67, 5 pls., 1923.
2. Yacimientos minerales de Pinar del Río: Cuba, Dirección de montes y minas, Bol. minas, no. 7, pp. 68–77, 1923.
3. Yacimientos metalíficos de Pinar del Río (continuación): Cuba, Dirección de montes y minas, Bol. minas, no. 8, pp. 45–50, 1 fig., August, 1925.
4. (and Lago, Manuel G.). Minas "Caridad" y "Lola" de Camagüey: Cuba, Dirección de montes y minas, Bol. minas, no. 8, pp. 51–56, August, 1925.
5. Estudio hidrológico de la cuenca del Río Almendares y su relación con los manantiales de Vento: Cuba, Dirección de montes y minas, Bol. minas, no. 9, pp. 33–73, 9 figs., 10 pls. (incl. map), 1926.
6. Yacimientos minerales de la República de Cuba; cobre: Cuba, Dirección de montes y minas, Bol. minas, año 11, no. 11, 148 pp., 50 figs., 3 pls. (incl. map), 1927.
7. Breves noticias del cobre en Cuba: Cuba, Dirección de montes y minas, Monografías geológicas (extracto), 47 pp., 1 pl. (map), 1927.

Allende, Roque—Continued.

8. Estudio hidrológico de las cuencas de Aguada del Cura, Río de San Antonio de los Baños y Laguna de Ariguanabo y sus posibles conexiones con los manantiales de Vento: Bol. minas, Habana, no. 12, pp. 4-20, 9 figs., 1 pl., 1928.
9. Informe relativo al abastecimiento de agua á la granja escuela "Juan Bautista Jiménez": Bol. minas, Habana, no. 12, pp. 21-29, 3 figs., 1928.
10. Yacimientos piritosos de la Sierra de Trinidad, Mina "Carlota": Bol. minas, Habana, no. 12, pp. 50-58, 2 figs., 1928.
11. Informe geológico sobre el acueducto de Jaruco [Cuba]: Bol. minas, Habana, no. 12, pp. 59-61, 1928.
12. Sobre un reconocimiento de terrenos graníticos en la provincia de la Habana [Cuba]: Bol. minas, Habana, no. 12, pp. 78-79, 1928.
13. Informe sobre una rápida inspección de los terrenos de Consolación del Sur [Cuba]: Bol. minas, Habana, no. 12, pp. 80-83, 1928.
14. Notas sobre los petróleos de Santa Clarita [Cuba]: Bol. minas, Habana, no. 12, pp. 84-85, 1928.
15. Monografía del asfalto y el petróleo: Cuba, Dirección de montes y minas, Bol. minas, no. 13, 153 pp., 24 figs., 1 pl., 1928.

Allera, Juan.

1. Campo Tecuanapa, región petrolera del Istmo [Vera Cruz, Mexico]: Bol. petróleo, vol. 25, no. 6, pp. 894-898, 5 pls., June, 1928.

Alling, Harold Lattimore. See also Kemp, 23.

1. Geology of the Lake Clear region (parts of St. Regis and Saranac quadrangles): New York State Mus. Bull., nos. 207, 208 (March-April, 1918), pp. 111-145, 10 pls., 3 figs., 2 maps, 1919.
2. Pleistocene geology [of the Lake Placid quadrangle]: New York State Mus. Bull. nos. 211, 212, pp. 71-95, 8 pls., 7 figs., map, 1919.
3. Some problems of the Adirondack pre-Cambrian: Am. Jour. Sci., 4th ser., vol. 48, pp. 47-68, 3 figs., July, 1919. Abstract, Geol. Soc. America, Bull., vol. 30, p. 155, March 31, 1919.
4. Glacial geology [of the Mount Marcy quadrangle, Essex County, New York]: New York State Mus. Bull. nos. 229, 230, pp. 62-84, 8 figs., 3 pls., 1921.
5. The mineralography of the feldspars. Part 1: Jour. Geology, vol. 29, no. 3, pp. 193-294, 19 figs., 6 pls., April-May, 1921.
6. The origin of graphite: Econ. Geology, vol. 16, nos. 4-5, pp. 334-337, 1921.
7. Petrographic studies of some New York sediments (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 107, March 31, 1922.
8. The mineralography of the feldspars; Part II: Jour. Geology, vol. 31, no. 4, pp. 282-305, 3 figs., 2 pls., May-June, no. 5, pp. 353-375, 4 figs., July-August, 1923.
9. The origin of the foliation and the naming of syntectic rocks: Am. Jour. Sci., 5th ser., vol. 8, pp. 12-32, 3 figs., July, 1924.
10. Genesis of the Adirondack magnetites: Econ. Geology, vol. 20, no. 4, pp. 335-363, June-July, 1925.
11. The potash-soda feldspars: Jour. Geology, vol. 34, no. 7, pp. 591-611, 5 figs., October-November, 1926.
12. (and Valentine, Wilbur G.). Quantitative microscopic analysis: Am. Jour. Sci., 5th ser., vol. 14, pp. 50-65, July, 1927.

Alling, Harold Lattimore—Continued.

13. Stratigraphy of the Grenville of the eastern Adirondacks: *Geol. Soc. America, Bull.*, vol. 38, no. 4, pp. 795–804, 4 figs., December 30, 1927; abstract, no. 1, pp. 121–122, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, pp. 70–71, February, 1927.
14. The geology and origin of the Silurian salt of New York State: *New York State Mus. Bull.* no. 275, 139 pp., 20 figs., April, 1928.

Alling, Mark N.

1. Ancient river-bed deposits in California: *Pacific Min. News*, vol. 1, nos. 5 and 6, pp. 134–140, 161–166, 16 figs., September and October, 1922.

Allison, E. L.

1. How was placer gold formed?: *Eng. and Min. Jour.-Press*, vol. 117, no. 19, pp. 771–772, May 10, 1924.

Allison, Ira S.

1. The Giants Range batholith of Minnesota: *Jour. Geology*, vol. 33, no. 5, pp. 488–508, 5 figs., July–August, 1925.
2. Enrichment of the Mesabi iron ores: *Econ. Geology*, vol. 20, no. 7, pp. 693–697, November, 1925.
3. Weathered granite twice metamorphosed: *Jour. Geology*, vol. 34, no. 3, pp. 281–285, April–May, 1926.
4. Cretaceous rocks of northern Minnesota (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 135, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 78, February, 1927.
5. New erosional terms: *Am. Jour. Sci.*, 5th ser., vol. 16, p. 360, October, 1928.

Allison, Vernon Charles.

1. The growth of stalagmites and stalactites: *Jour. Geology*, vol. 31, no. 2, pp. 106–125, 16 figs., February–March, 1923.
2. Quaternic and Tertiary chronology: *Pan-Am. Geologist*, vol. 42, no. 3, pp. 199–216, 2 pls., October, 1924.
3. Climatic pattern of Cenozoic times: *Pan-Am. Geologist*, vol. 43, no. 3, pp. 205–216, April, 1925.

Ambrohn, Richard.

1. Elements of geophysics as applied to explorations for minerals, oil, and gas. Translated by Margaret C. Cobb. xi, 372 pp., illus., New York, McGraw-Hill Book Company, 1928.

Ambrose, Arthur Warren.

1. Analysis of oil-field water problems: *Mining and Metallurgy*, no. 165, pp. 23–24, 1 fig., September, 1920 (abstract); *Am. Inst. Min. and Metal. Eng., Trans.* [preprint] no. 1019, 23 pp., 1920; discussion by R. A. Conkling, E. DeGolyer, and R. V. A. Mills, no. 1038, pp. 68–71, January, 1921; *Trans.*, vol. 65, pp. 245–268, 4 figs., 1921.
2. Underground conditions in oil fields: *U. S. Bur. Mines, Bull.* 195, 238 pp., 43 figs., 23 pls., 1920.

American Geographical Society.

1. New York walk book: *Am. Geog. Soc., Outing Series* no. 2, 217 pp., illus., 1923.

Includes notes on geological features in the vicinity of New York City.

American Geophysical Union.

1. Discussion following symposium on the constitution of the earth: Nat. Research Council, Bull. no 56 (vol 11, pt. 2), pp. 33-39, November, 1926.

American Institute of Mining and Metallurgical Engineers.

1. Discussion of the papers on geophysical prospecting presented at the New York meeting, February, 1928: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 130, 31 pp., October, 1928.

Ami, Henry Marc.

1. Memorial of Robert Bell: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 18-34, portr., March 30, 1927.

Aminoff, G.

1. (and Parsons, A. L.). The crystal structure of sperrylite: Toronto, Univ., Studies, Geol. ser., no. 27, pp. 5-10, 1928.

Anderegg, F. O.

1. (and others). Indiana limestone. 1; Efflorescence and staining: Purdue Univ., Bull., vol. 12, no. 6 (Eng. Exp. Sta., Bull. no. 33), 84 pp., 26 figs., September, 1928.

Anderson, Abram E.

1. Sand fulgurites from Nebraska, their structure and formative factors: Nebraska State Mus., Bull. 7, vol. 1, pp. 49-86, 21 figs., 1 pl., June 1925.

Anderson, Alfred L.

1. Mica deposits of Latah County, Idaho: Idaho, Bur. Mines and Geology, Pamph. no. 14, 15 pp., 1 pl. (map) [no date, 1925?]. [Mimeographed.]
2. Some Miocene and Pleistocene drainage changes in northern Idaho: Idaho, Bur. Mines and Geology, Pamph. no. 18, 29 pp., 2 pls. (maps), July, 1927. [Mimeographed.]
3. Portland cement materials near Pocatello, Idaho: Idaho, Bur. Mines and Geology, Pamph. no. 28, 15 pp. [mimeographed], 2 pls. (incl. map), June, 1928.
4. A geological reconnaissance in the St. Maries region, Idaho: Idaho, Bur. Mines and Geology, Pamph. no. 30, 22 pp., July, 1928. [Mimeographed.]
5. Genesis of the Silver Hill tin deposits [Spokane County, Washington]: Jour. Geology, vol. 36, no. 7, pp. 646-664, 6 figs., October-November, 1928.

Anderson, C. O. See Myers, 2.

Anderson, Carl B.

1. The artesian waters of northeastern Illinois: Illinois State Geol. Survey, Bull. no. 34, 326 pp., 4 pls. (incl. maps), 3 figs, 1919.

Anderson, Charles A.

1. Voltaite from Jerome, Arizona: Am. Mineralogist, vol. 12, no. 7, pp. 287-290, July, 1927; abstract, Geol. Soc. America, Bull., vol. 37, no. 1, p. 209, March 30, 1926.

Anderson, Frank Marion.

1. (and Hanna, G. Dallas). Fauna and stratigraphic relations of the Tejon Eocene at the type locality in Kern County, California: California Acad. Sci., Occ. Papers 11, 249 pp., 10 figs., 16 pls. (incl. map), March 18, 1925.
2. Origin of California petroleum: Geol. Soc. America, Bull., vol. 37, no. 4, pp. 585-614, December 30, 1926.
3. History of theories regarding siliceous shale and the origin of oil (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 197-199, March 30, 1927.
4. Late Cretacic fossils from Lower California: Pan-Am. Geologist, vol. 50, no. 4, pp. 283-284, 1 pl., November, 1928.

Anderson, Gustavus Edwin.

1. Experiments on the rate of wear of sand grains: Jour. Geology, vol. 34, no. 2, pp. 144-158, February-March, 1926; abstract, Chicago, Univ., Abstracts of Theses, Sci. Ser., vol. 3, pp. 205-208, April, 1927.
2. Geology and ore deposits of the Asientos-Tepezala district, Aguascalientes, Mexico: Am. Inst. Min. and Met. Eng., Trans. [preprint], no. 1551, 17 pp., 2 figs., February, 1926; Trans., vol. 74, pp. 238-254, 2 figs., 1926; abstract, Mining and Metallurgy, vol. 7, no. 230, p. 77, February, 1926.
3. The age of rounded sand grains: Oklahoma Acad. Sci., Proc., vol. 6, pt. 2, 1926 (Oklahoma, Univ., Bull., new ser. no. 348), pp. 265-267, January 1, 1927.
4. Geology of Cleveland and McClain counties: Oklahoma Geol. Survey, Bull. no. 40-N, 18 pp., 2 figs., 2 pls. (incl. maps), July, 1927.
5. On the origin of certain wide veins: Oklahoma Acad. Sci., Proc., vol. 7 (Oklahoma, Univ., Bull., new ser., no. 409), pp. 168-170 [1928].

Anderson, J. A.

1. A torsion seismometer: Optical Soc. America, Jour., vol. 8, no. 6, pp. 817-822, 1 fig., June, 1924.
2. (and Wood, H. O.). Description and theory of the torsion seismometer: Seismological Soc. America, Bull., vol. 15, no. 1, pp. 1-72, 4 figs., 4 pls., March, 1925.

Anderson, John Carter. See also Lindgren, 18.

1. Ore deposits of the Pioche district, Nevada: Eng. and Min. Jour., vol. 113, no. 7, pp. 279-285, 7 figs., February 18, 1922.
2. Economic application of zonal theory of primary deposition of ores (with discussion by Frank L. Nason, J. E. Spurr, James F. Kemp, and others): Am. Inst. Min. and Met. Eng., Trans., vol. 69, pp. 22-35, 5 figs., 1923 [preprint] no. 1209, 9 pp., 5 figs., January, 1923; abstract, Mining and Metallurgy, vol. 4, no. 193, p. 31, 1 fig., January, 1923.

Anderson, Robert. See also Takahashi, 1.

1. Origin of oil from marine plankton shales in California (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 199-200, March 30, 1927.

Andrews, Ernest Clayton.

1. Grove Karl Gilbert: Sierra Club Bull., vol. 11, no. 1, pp. 60-68, January, 1920.
2. Contribution to the hypothesis of mountain formation: Geol. Soc. America, Bull., vol. 34, no. 2, pp. 381-399, June 30, 1923.

Andrews, Ernest Clayton—Continued.

3. The romance of the unknown in the preparation of geological reports: *Econ. Geology*, vol. 20, no. 2, pp. 189-194, March-April, 1925.
4. Structural unity of the Pacific region; evidence of the ore deposits: *Econ. Geology*, vol. 20, no. 8, pp. 707-722, December, 1925.
5. Igneous intrusions and ore deposits of the "zone of rock flowage": *Econ. Geology*, vol. 21, no. 1, pp. 81-89, January-February, 1926.
6. Hypothesis of mountain building: *Geol. Soc. America, Bull.*, vol. 37, no. 3, pp. 439-454, September 30, 1926; abstract, no. 1, pp. 163-164, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, pp. 162-163, March, 1926.

Andros, Stephen O.

1. The petroleum handbook. 206 pp., 48 figs., Chicago, The Shaw Publishing Company, 1919.

Anrep, Aleph.

1. Peat investigations [New Brunswick]: Canada, Geol. Survey, Summ. Rept., 1918, pt. F, pp. 31-32, 1919.
2. Investigations of certain peat bogs in Ontario and Quebec: Canada, Geol. Survey, Summ. Rept., 1919, pt. E, pp. 44-45, 1920.
3. Investigation of peat bogs in Ontario and Quebec: Canada, Geol. Survey, Summ. Rept., 1920, pt. D, pp. 32-34, 1921.
4. Investigation of peat bogs in Ontario: Canada, Geol. Survey, Summ. Rept., 1921, pt. D, pp. 7-11, 3 maps, 1922.
5. Synopsis of information concerning the peat situation in Canada: Canada, Geol. Survey, Summ. Rept., 1921, pt. D, pp. 12-16, 1922.
6. Investigation of peat bogs in Quebec: Canada, Geol. Survey, Summ. Rept., 1922, pt. D, pp. 13-18, 3 maps, 1923.
7. Investigation of the peat bogs in New Brunswick: Canada, Geol. Survey, Summ. Rept., 1923, pt. C 2, pp. 13-22, 1924.
8. Investigation of peat bogs in Nova Scotia: Canada, Geol. Survey, Summ. Rept., 1924, pt. C, pp. 218-239, 12 figs., 1926.
9. Investigation of peat bogs in New Brunswick: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 142-153, 8 figs., 1927.
10. Investigation of peat bogs in Quebec: Canada, Geol. Survey, Summ. Rept., 1926, pt. C, pp. 73-76, 2 pls., 1927.
11. Peat bogs for the manufacture of peat litter and peat mull in southwest British Columbia: Canada, Geol. Survey, Summ. Rept., 1927, pt. A, pp. 53-61, 4 figs., 1928.

Antevs, Ernst. See also Twenhofel, 22, 29.

1. The recession of the last ice sheet in New England; with a preface and contributions by J. W. Goldthwait: *Am. Geog. Soc., Research series no. 11*, 120 pp., 19 figs., 6 pls., New York, 1922.
2. Recession of the land ice in New England (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 86-87, March 31, 1922.
3. Cycles in glacial and postglacial deposits: *Geol. Rev.*, vol. 13, no. 4, pp. 664-665, October, 1923.
4. Climatic changes: *Science, new ser.*, vol. 58, pp. 420-421, November 23, 1923.
5. On the Pleistocene history of the Great Basin: *Carnegie Inst., Washington, Year Book no. 22*, p. 323, 1924.
6. Retreat of the last ice sheet in eastern Canada: Canada, Geol. Survey, Mem. 146, 142 pp., 37 figs., 9 pls., 1925.

Antevs, Ernst—Continued.

7. Probable correlation between the last ice retreat in North America and in Europe (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 153–154, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, pp. 147–148, March, 1925.
8. Pleistocene pre-Wisconsin beds in Vermont (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 154–155, March 30, 1925; *Pan. Am. Geologist*, vol. 43, no. 2, pp. 150–151, March, 1925.
9. Conditions of formation of the varved glacial clay (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 171–172, March 30, 1925.
10. The climatologic significance of annual rings in fossil woods: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 296–302, April, 1925.
11. Glacial climatic conditions (abstract): *Sci. Monthly*, vol. 20, no. 5, pp. 464–465, May, 1925; *Pan-Am. Geologist*, vol. 43, no. 5, pp. 379–380, June, 1925.
12. On the Pleistocene history of the Great Basin: *Carnegie Inst. Washington, Pub. no. 352 (Quaternary climates)*, pp. 51–114, 19 figs., 3 pls., July, 1925.
13. Big tree as a climate measure (abstract): *Pan-Am. Geologist*, vol. 44, no. 1, pp. 74–76, August, 1925.
14. Late Quaternary changes of level in southern New England (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 181–182, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 170, March, 1926.
15. Sista istäcketts försvinnande i Nordamerika [last ice retreat in North America]: *Ymer, Stockholm (Svenska Sällskapet för Antropologi och Geografi)*, Årg. 1926, H. 3 o. 4, pp. 283–297, 2 figs., 1926.
16. Late Quaternary changes of level in Maine: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 319–336, 2 figs., April, 1928; abstract, *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 144, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 2, pp. 151–152, March, 1927.
17. The last glaciation, with special reference to the ice retreat in north-eastern North America: *Am. Geog. Soc., Research ser. no. 17*, 292 pp., 30 figs., 9 pls., 1928.
18. Varved sediments: *Nat. Research Council, Reprint and Circ. Ser.*, no. 85, pp. 17–20, 1928.

Apfel, Earl T. See Wentworth, 30.

Appleford, William L. See Macelwane, 11, 13.

Applin, Esther Richards. See also Cushman, 24; Dumble, 6.

1. (and Ellisor, Alva E., and Kniker, Hedwig T.). Subsurface stratigraphy of the Coastal Plain of Texas and Louisiana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 1, pp. 79–122, 1 fig., 1 pl., January–February, 1925.
2. Memorial to Laura Lane Weinzierl: *Jour. Paleontology*, vol. 2, no. 4, p. 383, December, 1928.

Applin, Paul L.

1. The Stratton Ridge salt dome, Brazoria County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 1, pp. 1–34, 6 figs., January–February, 1925; *Geology of salt dome oil fields*, pp. 644–677, 6 figs., 1926.

Arey, Melvin Franklin.

1. Geology of Ringgold County: *Iowa Geol. Survey*, vol. 27, pp. 33–64, 6 figs., map [1920].

Arey, Melvin Franklin—Continued.

2. Geology of Taylor County: Iowa Geol. Survey, vol. 27, pp. 65-103, 11 figs., map [1920].

Arizona Bureau of Mines.

1. Geologic map of the State of Arizona prepared by the Arizona Bureau of Mines in cooperation with the U. S. Geological Survey by N. H. Darton and others. Scale 1:500,000. 1924.
2. The zinc resources of Arizona: Min. Jour., Phoenix, Ariz., vol. 12, no. 1, pp. 7-8, 17, May 30, 1928.

Armstrong, Lyndon K.

1. Geology of Chewelah district [Washington]. In Northwest Mines Handbook, vol. 1, pp. 149-150, published by Sidney Norman, Spokane, Washington, 1918.

Armstrong, P.

1. A field method of reducing maps to scale: Econ. Geology, vol. 17, no. 3, pp. 219-221, 1 fig., May, 1922.
2. Zircon as criterion of igneous or sedimentary metamorphics: Am. Jour. Sci., 5th ser., vol. 4, pp. 391-395, 9 figs., November, 1922.
3. Geology and ore deposits of Elbow Lake area, northern Manitoba: Canada, Geol. Survey, Summ. Rept., 1922, pt. C, pp. 37-44, 1 fig., 1923.

Arnold, Benjamin Walworth.

1. (and Clark, Hubert Lyman). Jamaican fossil Echini; with descriptions of new species of Cainozoic Echinoidea by Herbert L. Hawkins: Harvard Coll., Mus. Comp. Zoology, Mem., vol. 50, no. 1, 84 pp., 3 figs., 22 pls., October, 1927.

Arnold, Chester A.

1. Some Devonian plant localities of central and western New York: Science, new ser., vol. 67, pp. 276-277, March 9, 1928.

Arnold, Ralph. See also Clark, B. L., 8; Laughlin, 1.

1. The recent earthquakes at Los Angeles, California: Science, new ser., vol. 52, pp. 121-122, August 6, 1920.
2. Oil geology in relation to valuation: Geol. Soc. America, Bull., vol. 31, no. 4, pp. 433-440, November 30, 1920.
3. (and Loel, Wayne). New oil fields of the Los Angeles basin, California: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, pp. 303-316, 2 figs., July-August, 1922.
4. (and English, Walter A.). Canadian oil reserves: Am. Inst. Min. and Met. Eng., Trans., vol. 68, pp. 985-988, 1923; [preprint] no. 1172, 4 pp., July, 1922; abstract, Mining and Metallurgy, no. 187, pp. 40-41, July, 1922.
5. (and others). Symposium on petroleum and gas: Am. Inst. Min. and Met. Eng., Trans. [preprint], no. 1241, pp. 1-134, 12 figs., April, 1923.
6. Two decades of petroleum geology, 1903-22: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 6, pp. 603-624, November-December, 1923.
7. Relationship of geology to development of Rocky Mountain oil fields: Nat. Petroleum News, vol. 18, no. 50, pp. 89-90, December 15, 1926.
8. Geology and development in Rocky Mountain States: Oil Weekly, vol. 44, no. 5, pp. 41-43, January 21, 1927.

- Ashley, George Hall. See also Johnson, R. H., 2, 3; Knopf, E. B., 3; Miller, B. L., 9; Pennsylvania Topographic and Geologic Survey; Renick, 1; Swartz, C. K., 10; White, I. C., 9; Willis, 15; Winchester, 1.
1. A use classification of coal: *Am. Inst. Min. and Met. Eng., Bull.* no. 152, pp. 1129-1141, August, 1919; (with discussion), *Trans.*, vol. 63, pp. 782-796, 1920; *Coal Age*, vol. 16, pp. 918-925, 4 figs., December 25, 1919.
 2. Discussion of an article by Ellis Lovejoy, entitled "Notes on fire clays of the northern Appalachian coal basin": *Am. Ceramic Soc., Jour.*, vol. 2, no. 10, pp. 790-793, October, 1919.
 3. Memorial of Albert Homer Purdue: *Indiana Acad. Sci., Proc.* 1918, pp. 247-257, portr., 1919.
 4. The Abram Creek-Stony River coal field, northeastern West Virginia: *U. S. Geol. Survey, Bull.* 711, pp. 85-103, 2 pls. (incl. map), February 13, 1920. Abstract by J. D. Sears, *Washington Acad. Sci., Jour.*, vol. 10, no. 18, p. 521, November 4, 1920.
 5. The story of the Pennsylvania survey: *Pennsylvania, Bur. Topog. and Geol. Survey, Misc. Papers*, no. 1, 20 pp., 21 figs., Harrisburg, 1920.
 6. Sulphur in coal, geological aspects: *Am. Inst. Min. and Met. Eng., Bull.* no. 153, pp. 2073-2079, September, 1919; *Trans.*, vol. 63, pp. 732-738, 1920. Discussion, *Mining and Metallurgy*, no. 157, p. 60, January, 1920.
 7. How the "grand push" determined present character of Pennsylvania coal: *Coal Age*, vol. 17, no. 26, pp. 1307-1310, 2 figs. (maps), June 24, 1920.
 8. Mineral resources of Pennsylvania: *Engineers' Soc. Western Pennsylvania, Proc.*, vol. 37, no. 1, pp. 1-20, February, 1921.
 9. (and Fettke, C. R.). Pennsylvania coals and shales greatly vary in their content of oil: *Coal Age*, vol. 19, no. 9, pp. 401-403, March 3, 1921.
 10. The outlook for oil and gas in Pennsylvania: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, pp. 100-101 (abstract), no. 3, pp. 357-372, May-June, 1921.
 11. (and Robinson, J. F.). Oil and gas fields of Pennsylvania; Vol. I, Introduction: *Pennsylvania Geol. Survey, Fourth series*, 79 pp., 9 figs., 5 pls. (incl. map), 1922.
 12. Proposed new nomenclature of the Appalachian coal measures (abstract with discussion): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 111-112, March 31, 1922.
 13. The work of the Pennsylvania Geological Survey, 1919-1922: *Pennsylvania, Bur. Topog. and Geologic Survey*, 18 pp., 2 figs., 1923.
 14. A geologic time scale: *Eng. and Min. Jour.-Press*, vol. 115, no. 25, pp. 1106-1109, June 23, 1923; *Coal Age*, vol. 24, no. 3, pp. 102-104, July 19, 1923.
 15. Classification of coal . . . : *Coal Age*, vol. 25, no. 5, pp. 167-171, January 31, 1924.
 16. Proposed stratigraphic section and code (abstract, with discussion by J. J. Galloway and Charles Schuchert): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 101-103, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, pp. 150-151, March, 1924.
 17. Silurian stratigraphy at Lehigh Gap: *Pennsylvania, Topog. and Geol. Survey, Bull.* no. 86, 6 pp., November 23, 1925. [Mimeographed.]

Ashley, George Hall—Continued.

18. Geology and mineral resources of the Punxsutawney quadrangle, Pennsylvania: Pennsylvania Geol. Survey, Topog. and Geol. Atlas, no. 65, Punxsutawney quadrangle, 145 pp., 26 figs., 6 pls. (maps and sections), 1926.
19. Memorial of Richard R. Hice: Geol. Soc. America, Bull., vol. 37, no. 1, pp. 94-96, 1 pl. (portr.), March 30, 1926.
20. A practical classification of coals: Pennsylvania, Topog. and Geol. Survey, Bull. no. 89, 16 pp., March, 1926.
21. The Pittsburgh coal bed of Pennsylvania: Am. Inst. Min. and Met. Eng., Trans., [preprint], no. 1602, 6 pp., 2 figs. (incl. map), October, 1926.
22. A stratigraphic time scale: Pennsylvania, Topog. and Geol. Survey, Bull. no. 91, 10 pp., March 30, 1927. [Mimeographed.]
23. Glacial studies of Frank Leverett outside of the Lewis and Wright glacial boundary in Pennsylvania (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 210-211, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 4, pp. 313-314, April, 1927.
24. Geology and the world at large: Science, new ser., vol. 67, pp. 21-24, January 13, 1928.
25. The Canadian system: Pennsylvania, Topog. and Geol. Survey, Bull. no. 93, 10 pp., April 2, 1928. [Mimeographed.]
26. Bituminous coal fields of Pennsylvania; introductory volume, part 1, general information on coal: Pennsylvania Topog. and Geol. Survey, 4th ser., Bull. M6, pt. 1, 241 pp., 32 figs., 17 pls., 1928.

Ashmead, Dever C.

1. Anthracite losses and reserves in Pennsylvania: Pennsylvania Geol. Survey, 4th ser., Bull. M8, 71 pp., 13 figs., 1 pl. (map), 1926.

Athy, L. F. See also Ekblaw, 3.

1. Geology and mineral resources of the Herscher quadrangle: Illinois State Geol. Survey, Bull. no. 55, 120 pp., 38 figs., 2 pls. (maps), 1928; abstract, Chicago, Univ., Abstracts of Theses, Sci. Ser., vol. 3, pp. 209-215, April, 1927.

Atl, ———.

1. L'attività del Popocatepetl [Mexico]: Zeitschr. Vulkanologie, Bd. 6, H. 3, pp. 183-191, 5 pls., April, 1922.

Atwood, Alice Cary.

1. Peat; a contribution towards a bibliography of the American literature through 1925: U. S., Dept. Agr., Library, Bibliographical Contributions, no. 12, 95 pp., September, 1926. [Mimeographed.]

Atwood, Rollin Salisbury. See Atwood, 5.

Atwood, Wallace Richards. See Atwood, 6, 7.

Atwood, Wallace Walter.

1. The country around Camp Devens. [Text on back of topographic map]. Massachusetts, Camp Devens and vicinity, U. S. Geol. Survey, 1919.
2. Relation of landslides and glacial deposits to reservoir sites in the San Juan Mountains, Colorado (U. S. Geol. Survey, Bull. 685, 1918) (abstract by R. W. Stone): Washington Acad. Sci., Jour., vol. 9, no. 11, p. 316, June 4, 1919.
3. Final stages in the physiographic evolution of the San Juan Mountains (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 70-71, March 31, 1921.

Atwood, Wallace Walter—Continued.

4. (and Mather, Kirtley F.). Physiographic history of the San Luis Valley of Colorado and New Mexico (abstract, with discussion by William C. Alden, Andrew C. Lawson, and W. P. White): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 121–123, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, pp. 157–158, March, 1924.
5. (and Atwood, Rollin Salisbury). Physiographic stages in the evolution of the San Juan Mountain region and their correlation with the physiography of the Front Ranges of Colorado (abstract): *Assoc. Am. Geographers, Annals*, vol. 15, no. 1, p. 31, March, 1925.
6. (and Atwood, Wallace R.). Ancient tillite near Gunnison, Colorado (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 168, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 159, March, 1925.
7. (and Atwood, Wallace R.). Gunnison tillite of Eocene age [Colorado]: *Jour. Geology*, vol. 34, no. 7, pp. 612–622, 10 figs., October–November, 1926.
8. Eocene glaciation in Colorado: Third Pan-Pacific Sci. Cong., Tokyo, 1926, *Proc.*, pp. 1826–1833, 1928.

Augur, Irving V.

1. Résumé of oil-well operations in Imperial Valley: California State Mining Bur., Summary of Operations, California Oil Fields, Fifth Ann. Rept. State Oil and Gas Supervisor, vol. 5, no. 10, pp. 5–9, 1 fig., April, 1920.

Aurand, Harry A.

1. Fluorspar deposits of Colorado: Colorado Geol. Survey, Bull. 18, 94 pp., 1 pl., 10 figs., 1920.
2. Mineral deposits of the western slope: Colorado Geol. Survey, Bull. 22, 78 pp., 2 maps [1920].

Auer, Väinö.

1. Some problems of peat bog investigation in Canada: Canada, Geol. Survey, *Summ. Rept.*, 1927, pt. 2, pp. 96–111, 1928.

Aurin, Fritz L. See also Clark, G. C., 1.

1. Pre-Pennsylvanian oil and gas horizons in Kay County, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 4, no. 2, pp. 173–181, 1920.
2. (and Clark, G. C., and Trager, E. A.). Notes on the subsurface pre-Pennsylvanian stratigraphy of the northern Mid-Continent oil fields: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 2, pp. 117–153, 4 pls. (with discussion by M. J. Millard, C. A. Hammill, I. C. White, and W. C. Kite, pp. 324–325), March–April, 1921.
3. (and Officer, H. G., and Gould, Charles N.). The subdivision of the Enid formation: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 8, pp. 786–799, 1 fig., August, 1926.

Aurousseau, M. See also Bowen, 14.

1. (and Washington, H. S.). The nephelite syenite and nephelite porphyry of Beemerville, New Jersey: *Jour. Geology*, vol. 30, no. 7, pp. 571–586, 1 fig., October–November, 1922.
2. The residue from silica in rock analysis: *Washington Acad. Sci., Jour.*, vol. 13, no. 14, pp. 330–332, August 19, 1923.
3. (and Merwin, H. E.). Olivine: I, from the Hawaiian Islands; II, pure forsterite: *Am. Mineralogist*, vol. 13, no. 11, pp. 559–564, November, 1928.

Austin, George M.

1. Richmond faunal zones in Warren and Clinton counties, Ohio: U. S. Nat. Mus., Proc., vol. 70, art. 22, 18 pp., 1927.

Austin, M. M.

1. (and Parr, S. W.). Potash shales of Illinois (abstract): Science, new ser., vol. 53, p. 240, March 11, 1921.

Ayres, Vincent L.

1. Pyrite from Tucson, Arizona: Am. Mineralogist, vol. 9, no. 4, pp. 91-92, 2 figs., April, 1924.

Babcock, Earle Jay. See also Leonard, 7.

1. North Dakota coals and clays as factors in industrial development: North Dakota, Univ., College of Engineering, 34 pp., 1 fig., 20 pls., [1925?].

Babé, Enrique.

1. (and Allende, Roque). Lo que es y significa la sustancia desconocida, encontrada en el pozo No. 4, á 1600 pies de profundidad en la mina de gasolina y nafta "San Juan de Motembo" [Cuba]: Bol. minas, Habana, no. 12, pp. 62-77, 3 figs., 1928.

Baddley, Elmer R. See Blackwelder, 9.

Bagg, Rufus Mather.

1. The Foraminifera of the Bonaventure cherts of Gaspé: New York State Mus. Bull. nos. 219, 220, pp. 149-204, 6 pls., 1920.
2. Fossil starfishes in the Galena limestone of Wisconsin (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 227, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 3, p. 235, April, 1927.

Bailey, Edward Battersby.

1. The ancient mountain systems of Europe and America: Scottish Geog. Mag., vol. 44, no. 6, pp. 321-334, 2 figs., November 15, 1928; Nature, vol. 122, pp. 811-814, 2 figs., November 24, 1928. Paleozoic mountain systems of Europe and America: Pan-Am. Geologist, vol. 50, no. 3, pp. 161-188, 2 pls., October, 1928; British Assoc. Adv. Sci., Rept. 96th Meeting, 1928, pp. 57-76, 2 figs., 1929.
2. (and Collet, L. W., and Field, R. M.). Paleozoic submarine landslips near Quebec City: Jour. Geology, vol. 36, no. 7, pp. 577-614, 9 figs., October-November, 1928.

Bailey, Gilbert Ellis.

1. Check list of the geologic formation names of California. 15 pp., University of Southern California, 1923.
2. California, a geologic wonderland. 119 pp., 1 pl., Los Angeles, The Times-Mirror Press, 1924.

Bailey, I. W.

1. The problem of identifying the wood of Cretaceous and later dicotyledons; *Paraphyllanthoxylon arizonense*: Annals Botany, vol. 38, pp. 439-451, 1 pl., July, 1924.

Bailey, J. P. See Reed, 12.

Bailey, Joseph Whitman.

1. Loring Woart Bailey; the story of a man of science. 141 pp., illus., St. John, N. B., J. & A. McMillan, 1925.

Bailey, Loring Woart, 1839-1925.

1. (and Mathew, G. F.). Some problems of New Brunswick geology: Roy. Soc. Canada, Trans., 3d ser., vol. 12, sec. 4, pp. 105-130, 1919.
2. The paleogeography of Acadia: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 13, sec. 4, pp. 1-16, 1920.

Bailey, Reed W.

1. The Bear River Range fault, Utah: Am. Jour. Sci., 5th ser., vol. 13, pp. 497-502, 2 figs., June, 1927.

Bailey, Thomas Laval. See also Woodford, 4.

1. The geology and natural resources of Colorado County: Texas, Univ., Bull. no. 2333, 163 pp., 7 figs., 7 pls. (incl. map), November, 1923.
2. Extensive volcanic activity in the middle Tertiary of the south Texas Coastal Plain: Science, new ser., vol. 59, pp. 299-300, March 28, 1924.
3. The Gueydan, a new middle Tertiary formation from the southwestern Coastal Plain of Texas: Texas, Univ., Bull., no. 2645, 187 pp., 3 figs., 12 pls. (incl. map), December 1, 1926.

Bailey, Vernon.

1. Rock rivers: Natural History, vol. 20, no. 2, pp. 16-172, 5 figs., March-April, 1920.

Bailey, Willard F.

1. Carbonic invertebrates from a Triassic conglomerate in Arizona (abstract): Pan-Am. Geologist, vol. 45, no. 3, p. 251, April, 1926.

Bain, George W.

1. Magnesite deposits of Grenville, Quebec: Am. Inst. Min. and Met. Eng. Trans., vol. 69, pp. 60-78, 7 figs., 1923; [preprint] no. 1244, 19 pp., 7 figs., May, 1923; abstract, Mining and Metallurgy, vol. 4, no. 197, p. 257, May, 1923.
2. Almandite and its significance in the contact zones of the Grenville limestone: Jour. Geology, vol. 31, no. 8, pp. 650-668, 7 figs., November-December, 1923.
3. Alluvial fan deposits in the Upper Huronian: Am. Jour. Sci., 5th ser., vol. 8, pp. 54-60, 2 figs. (maps), July, 1924.
4. Types of magnesite deposits and their origin: Econ. Geology, vol. 19, no. 5, pp. 412-433, August, 1924.
5. Amount of assimilation by the Sudbury norite sheet: Jour. Geology, vol. 33, no. 5, pp. 509-525, 4 figs., pp. 509-525, 4 figs., July-August, 1925.
6. Pre-Keewatin sediments of the upper Harricana Basin, Quebec: Jour. Geology, vol. 33, no. 7, pp. 728-743, 10 figs. (incl. map), October-November, 1925.
7. Skeleton quartz crystals: Am. Mineralogist, vol. 10, no. 12, pp. 435-441, 7 figs., December, 1925.
8. Barraute area, Abitibi County, Quebec: Canada, Geol. Survey, Summ. Rept., 1924, pt. C, p. 126, map, 1926.
9. Diffusion in Agate Point vitrophyres [Lake Superior, Ontario]: Am. Jour. Sci., 5th ser., vol. 11, pp. 74-88, 7 figs., January, 1926.
10. Resorption as an agent in freeing hematite from the Grenville granite magma: Canadian Inst. Min. and Met., Bull., no. 167, pp. 379-392, 7 figs., March, 1926.
11. Agate Point rocks [Lake Superior, Ontario]: Am. Jour. Sci., 5th ser., vol. 11, p. 364, April, 1926.

Bain, George W.—Continued.

12. Representation of three dimensional space: Canadian Min. Jour., vol. 47, no. 16, pp. 417-425, 13 figs., April 16, 1926.
13. Localization of mineral deposits of northern Ontario and Quebec: Canadian Min. Jour., vol. 47, no. 17, pp. 440-443, 3 figs., April 23, 1926.
14. Evidence of assimilation and assimilation processes: Jour. Geology, vol. 34, no. 7, pp. 657-670, 2 figs., October-November, 1926.
15. Tectonics of original Huronian of Webbwood, Ontario: Pan-Am. Geologist, vol. 44, no. 2, pp. 95-120, 1 fig., 5 pls., September, 1925.
16. Source of original Huronian sediments: Pan-Am. Geologist, vol. 44, no. 3, pp. 187-198, 2 pls., October, 1925.
17. Is the Huronic Gowganda conglomerate of glacial origin?: Pan-Am. Geologist, vol. 44, no. 5, pp. 369-386, 1 fig., 1 pl., December, 1925.
18. Killarneyan intrusives of Sudbury [Ontario]: Pan-Am. Geologist, vol. 45, no. 2, pp. 109-124, 1 pl. (map), March, 1926.
19. Chemistry of Killarneyan magma of Sudbury: Pan-Am. Geologist, vol. 45, no. 4, pp. 277-294, 4 pls., May, 1926.
20. Physiographic development of Canadian shield: Pan-Am. Geologist, vol. 46, no. 1, pp. 53-62, 2 pls., August, pp. 363-374, 2 pls., December, 1926.
21. Physiographic development of Canadian shield: Pan-Am. Geologist, vol. 47, no. 1, pp. 15-28, 1 fig., 2 pls., February, 1927.
Geology and problems of Webbwood area, Canada, Thesis, Columbia University, 1927. Contributions from the department of geology of Columbia University, vol. 36, no. 3. Consists of titles nos. 15-21, reprints bound together.
22. The geology and mineral deposits of the Harricanaw and Bell river basins: Canadian Min. and Met. Bull., no. 178, pp. 201-247, 25 figs., 4 pls. (incl. maps), February, 1927; discussion, no. 181, pp. 594-603, May, 1927.
23. Huronian stromatoporoid-like masses: Pan-Am. Geologist, vol. 47, no. 4, pp. 281-284, 2 pls., May, 1927.
24. Geologic history of the Green Mountain front: Vermont, State Geologist, 15th Rept., 1925-26, pp. 222-241, 9 figs., 1927.
25. Contact metamorphism and related changes in composition: Vermont State Geologist, 15th Rept., 1925-26, pp. 242-263, 14 figs., 1927.

Bains, Thomas H.

1. Location of future ores of the Southwest [discussion of Red Bed formation, Nevada, Arizona, New Mexico, Texas]: Min. Jour., Phoenix, Ariz., vol. 11, no. 9, pp. 5-7, 2 figs., September 30, 1927.

Baitsell, George Alfred.

1. (editor). The evolution of man; a series of lectures delivered before the Yale chapter of the Sigma Xi during the academic year 1921-22. 202 pp., 27 figs., New Haven, Yale University Press, 1922.

Baker, Arthur A. See also Smith, W. R., 1; Spieker, 6.

1. (and Dobbin, C. E., McKnight, E. T., and Reeside, J. B., jr.). Notes on the stratigraphy of the Moab region, Utah: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 8, pp. 785-808, 4 figs., August, 1927.

Baker, Charles Laurence. See also Stone, 11; Udden, 5.

1. Contributions to the stratigraphy of eastern New Mexico: Am. Jour. Sci., 4th ser., vol. 49, pp. 99-126, February, 1920.

Baker, Charles Laurence—Continued.

2. The Cretaceous of west Texas and its oil possibilities: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, pp. 5-28, January-February, 1921.
3. General geology of Catorce mining district [San Luis Potosi, Mexico]; Am. Inst. Min. and Met. Eng., Trans. [preprint], no. 1089, 7 pp., September, 1921; vol. 66, pp. 42-48, 1922. Abstract, Mining and Metallurgy, no. 177, p. 53, September, 1921.
4. Caverns in the Guadalupe Mountain range [New Mexico]: Science, new ser., vol. 59, p. 379, April 25, 1924.
5. Edwin Theodore Dumble: Science, new ser., vol. 65, pp. 363-364, April 15, 1927.
6. Exploratory geology of a part of southwestern trans-Pecos Texas: Texas Univ., Bull. no. 2745, 70 pp., map. December 1, 1927.
7. Geology of the Panuco district [Mexico]: Oil Weekly, vol. 45, no. 1, pp. 60, 64, 68, 72, 120-121, March 25, no. 2, pp. 37-38, 46, April 1, no. 3, pp. 40-42, 59-60, April 8, no. 4, pp. 52, 54, 56, 58, April 15, 1927; [in Spanish] Bol. petróleo, vol. 24, no. 1, pp. 21-37, July, no. 2, pp. 146-159, August, 1927.
8. Panuco oil field, Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 4, pp. 395-441, April, 1928.
9. Possible distillation of oil from organic sediments by heat and other processes of igneous intrusions; asphalt in the Anacacho formation of Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 10, pp. 995-1003, October, 1928.
10. The date of the major diastrophism and other problems of the Marathon basin, trans-Pecos Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 11, pp. 1111-1116, November, 1928.
11. Desert range tectonics of trans-Pecos Texas: Pan.-Am. Geologist, vol. 50, no. 5, pp. 341-373, 8 pls., December, 1928.

Baker, Frank Collins.

1. The life of the Pleistocene or glacial period: Illinois, Univ., Bull., vol. 17, no. 41, 476 pp., 57 pls., 3 figs., 1920.
2. A new form of *Amnicola* from the Ohio Pleistocene deposits with notes on a *Physa* from the same formation: Nautilus, vol. 33, no. 4, pp. 125-127, April, 1920.
3. Pleistocene Mollusca from Indiana and Ohio: Jour. Geology, vol. 28, no. 5, pp. 439-457, July-August, 1920.
4. Animal life in loess deposits near Alton, Illinois, with descriptions of two new varieties of land shells from the same deposits: Nautilus, vol. 34, no. 2, pp. 61-66, October, 1920.
5. The value of ecology in the interpretation of fossil faunas: School Science and Mathematics, vol. 21, pp. 323-327, April, 1921.
6. New forms of Pleistocene mollusks from Illinois: Nautilus, vol. 35, no. 1, pp. 22-24, July, 1921.
7. The importance of ecology in the interpretation of fossil faunas: Ecology, vol. 2, no. 4, pp. 277-280, October, 1921.
8. Pleistocene Mollusca from northwestern and central Illinois: Jour. Geology, vol. 30, no. 1, pp. 43-62, January-February, 1922.
9. Pleistocene Mollusca from the vicinity of Joliet, Illinois: Illinois State Acad. Sci., Trans., vol. 15, pp. 408-420 [1923].

Baker, Frank Collins—Continued.

10. Bowmanville low-water stage of glacial Lake Chicago: *Science*, new ser., vol. 64, p. 249, September 10, 1926.
11. Descriptions of new forms of Pleistocene land mollusks from Illinois with remarks on other species: *Nautilus*, vol. 40, no. 4, pp. 114-120, April, 1927.
12. Description of new varieties of land and fresh water mollusks from the Pleistocene deposits in Illinois: *Nautilus*, vol. 41, no. 4, pp. 132-137, April, 1928.
13. Molluscan life of the loess deposits of Illinois: *Illinois State Acad. Sci., Trans.*, vol. 20, pp. 269-292, March, 1928.

Baker, Herbert Arthur.

1. General report of the government geologist, 1926-27: Newfoundland, Geol. Survey, Rept. of Progress for 1926, 34 pp., 1927.
2. The St. George's coal field, Newfoundland: *Canadian Inst. Min. and Met., Trans.*, vol. 30, pp. 327-346, 3 figs. (maps) [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc., pt. 1, pp. 721-740, 3 figs. (maps), 1928.

Baker, Manley Benson.

1. Geology and minerals of the County of Leeds: Ontario Dept. Mines, 31st Ann. Rpt., vol. 31, pt. 6, 26 pp., 10 figs., 1 pl., map, 1923.
2. Metallogenesis and the pre-Cambrian of Canada: *Canadian Min. Jour.*, vol. 45, no. 46, pp. 1121-1123, 1 fig., November 14, 1924; abstract, *Pan-Am. Geologist*, vol. 42, no. 1, pp. 71-72, August, 1924.
3. Metallogenesis and the pre-Cambrian of Canada (abstract): *British Assoc. Adv. Sci., Rept.*, 92d Meeting, p. 382, 1925.
4. Memorial of William Lawrence Uglow: *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 100-106, portr., March 30, 1927.

Baker, W. M. See Wallace, 17.

Baker, W. G.

1. A light-colored zone of subsoil in southern Iowa: *Iowa Acad. Sci., Proc.*, vol. 31, pp. 347-349, 2 figs. [1926?].

Baker, William A., jr. See Swartz, C. K., 3.

Balch, Edwin Swift.

1. The Coudersport [Pennsylvania] ice mine: *Am. Philos. Soc., Proc.*, vol. 60, no. 4, pp. 553-559, 2 figs., 1921.

Balcom, S. F.

1. The paleolithic stone age in Indiana: *Indiana Acad. Sci., Proc.*, 38th Ann. Meeting, 1922, pp. 105-117, 6 figs., 1923.

Baldwin, Harry L., jr. See Keyte, 2.

Baldwin, S. Prentiss.

1. (and Collins, Robert F.). Descriptive geology of northeastern New Mexico (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 161, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 72, February, 1928.

Bale, Hubert E.

1. Oil and gas geology of Logan County: *Oklahoma Geol. Survey, Bull.* no. 40-GG, 18 pp., 2 figs., 2 pls. (incl. map), September, 1928.

Balk, Robert. See also Cloos, 1.

1. Primary structure of granite massives (with discussion by J. F. Kemp): Geol. Soc. America, Bull., vol. 36, no. 4, pp. 679-696, 7 figs., December 30, 1925; abstract, no. 1, p. 169, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 159, March, 1925.
2. Structure of the Cortlandt norite, New York (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 146, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 1, p. 94, February, 1926.
3. Report on the field work done for the New York State Geological Survey in geological mapping of the Newcomb quadrangle, Essex County, N. Y.: New York State Mus. Bull. 267, pp. 30-31, 1926.
4. A contribution to the structural relations of the granitic intrusions of Bethel, Barre, and Woodbury, Vermont: Vermont, State Geologist, 15th Rept. 1925-26, pp. 39-96, 19 figs., 6 pls., 1927.
5. Die primäre Struktur des Noritmassivs von Peekskill am Hudson, nördlich New York (auch bekannt als "Cortlandt Norit"); geologische Beobachtungen zur Tektonik des Magmas und zu den Problemen der Differentiation und Paläogenese: Neues Jahrb., Beilage-Bd. 57, Abt. B, pp. 249-303, 39 figs., 3 pls., 1927.

Ball, A. H. See Cockfield, 16.

Ball, John R. See also Flint, 2.

1. The intercession of Pike River near Kenosha, Wisconsin: Illinois State Acad. Sci., Trans., vol. 13, pp. 323-326 [1921].

Ball, Max Waite. See also Hintze, 1; Moore, R. C., 17.

1. The relative ages of major and minor folding and oil accumulation in Wyoming: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, pp. 49-63, 5 figs., January-February, 1921.
2. Gas and oil near Fort Collins, Colorado: Colorado School of Mines, Alumni Mag., vol. 13, no. 9, pp. 10-16, January, 1924.
3. Gas near Fort Collins, Colorado: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 1, pp. 79-87, January-February, 1924.
4. Waters from the Green River shale: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, p. 171, January-February, 1925.

Ball, Sydney Hobart. See also Lindgren, 7; Penrose, 4; Wheeler, H. A., 3.

1. (and Broderick, T. M.). Magmatic iron ore in Arizona: Eng. and Min. Jour., vol. 107, pp. 353-354, 2 figs., February 22, 1919.
2. Diamonds: Eng. and Min. Jour., vol. 109, pp. 1202-1208, 5 figs., May 29, 1920.
3. Proceedings of the first annual meeting of the Society of Economic Geologists, Amherst, Massachusetts, December 28-30, 1921: Geol. Soc. America, Bull., vol. 33, no. 1, pp. 223-226, March 31, 1922.
4. The mineral resources of Greenland: Meddelelser om Grønland, Bd. 63, pp. 1-60, 23 figs., 1922.
5. The geologic and geographic occurrence of precious stones: Econ. Geology, vol. 17, no. 7, pp. 575-601, 5 figs., November, 1922.
6. Proceedings of the second annual meeting of the Society of Economic Geologists, held at Ann Arbor, Michigan, December 28-30, 1922: Geol. Soc. America, Bull., vol. 34, no. 1, pp. 143-146, March 30, 1923.

Ballard, Samuel Milroy. See also Thomson, F. A., 3.

1. The Boise Basin district in Idaho: Eng. and Min. Jour., vol. 109, pp. 881-882, 1 fig., April 10, 1920.

Ballard, Samuel Milroy—Continued.

2. Geology and ore deposits of Alturas quadrangle, Blaine County, Idaho: Idaho, Bur. Mines and Geology, Bull. no. 5, 36 pp., 8 figs., 10 pls., 1922.
3. Geology and gold resources of Boise Basin, Boise County, Idaho: Idaho Bur. Mines and Geology, Bull. no. 9, 103 pp., 12 figs., 13 pls. (incl. map), December, 1924.
4. Geology and ore deposits of the Rocky Bar quadrangle: Idaho, Bur. Mines and Geology, Pam. no. 26, 41 pp., March, 1928. [Mimeographed.]

Balliet, Letson.

1. A study in oil deposits: Oil Age, vol. 20, no. 4, pp. 10, 12, October, 1923.
2. The genesis of petroleum: Oil Age, vol. 20, no. 5, pp. 10, 12, 49-50, 5 figs., November; no. 6, pp. 10-12, 54, 3 figs., December, 1923; vol. 21, no. 1, pp. 10-11, January; no. 2, pp. 11, 26, February; no. 3, pp. 9-10, 31, March; no. 4, pp. 18, 20, 48, April; no. 5, pp. 16, 18, 34-35, 3 figs., May, 1924.
3. Theories as to the origin of ore deposits: Min. Jour., Phoenix, Ariz., vol. 10, no. 14, p. 7, December 15, 1926.

Ballou, W. H.

1. A question of identity; were flying reptiles merely unfeathered birds, or birds merely feathered reptiles?: Sci. Am., vol. 120, no. 22, pp. 570-571, 3 figs., May 31, 1919.

Bancroft, George J.

1. The genesis of quartz in veins: Min. and Sci. Press, vol. 119, pp. 447-448, September 27, 1919.

Bancroft, Joseph Austen.

1. (and Howard, W. V.). The Essexites of Mount Royal, Montreal, P. Q.: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 17, sec. 4, pp. 13-43, 4 pls., May, 1923.
2. Restoration of the oldest known forest [middle Devonian, Gilboa, New York]; Science, new ser., vol. 61, pp. 507-508, May 15, 1925.

Bancroft, M. F. See also Uglow, 8.

1. Lardeau map area, British Columbia: Canada, Geol. Survey, Summ. Rept., 1918, pt. B, pp. 62-63, 1919.
2. Slocan map area, B. C.: Canada, Geol. Survey, Summ. Rept., 1919, pt. B, pp. 39-48, 1920.
3. Lardeau map-area, British Columbia: Canada, Geol. Survey, Summ. Rept., 1920, pt. A, pp. 94-102, 1921; . . . 1921, pt. A, pp. 107-112, 1 fig., 1922.
4. Discussion of paper by W. L. Uglow, Quartz veins of Barkerville, Cariboo district, British Columbia: Canadian Inst. Min. and Met., Monthly Bull., no. 129, pp. 63-64, January, 1923.

Banks, C. A.

1. The B. C. Silver Mines [Salmon River valley, British Columbia]: Min. Mag. vol. 31, no. 3, pp. 149-152, 3 figs., September, 1924.

Barbour, Erwin Hinckley. See also Matthew, 33.

1. A preliminary report on the alkali resources of Nebraska: Nebraska Geol. Survey, vol. 4, pt. 28, pp. 405-438, 21 figs. [1916].
2. *Elephas scotti*, a new primitive mammoth from Nebraska: Nebraska State Mus., Bull. 2, vol. 1, pp. 21-24, 5 figs., April, 1925.

Barbour, Erwin Hinckley—Continued.

3. *Prosthennops xiphodonticus*, sp. nov., a new fossil peccary from Nebraska: Nebraska State Mus., Bull. 3, vol. 1, pp. 25–31, 2 figs., April, 1925.
4. Notes on Nebraska fulgurites: Nebraska State Mus., Bull. 6, vol. 1, pp. 45–48, 2 figs., June, 1925.
5. Hackberry conglomerate, a new Nebraska rock: Nebraska State Mus., Bull. 8, vol. 1, pp. 87–90, 5 figs., August, 1925.
6. *Tetrabelodon abeli*, sp. nov.: Nebraska State Mus., Bull. 9, vol. 1, pp. 91–94, 6 figs., August, 1925.
7. Skeletal parts of the Columbian mammoth *Elephas maibeni*, sp. nov. [*Archidiskodon maibeni*]: Nebraska State Mus., Bull. 10, vol. 1, pp. 95–118, 30 figs., August, 1925.
8. *Archidiskodon maibeni*: Nebraska State Mus., Bull. 11, vol. 1, pp. 119–122, 1 fig., June, 1926.
9. Preliminary notice of a new proboscidean *Amebelodon fricki* gen. et sp. nov. [from Frontier County, Nebr.]: Nebraska State Mus., Bull. 13, vol. 1, pp. 131–134, 3 figs., June 15, 1927.

Bardwell, Carlos.

1. (and others). Chemical properties of Utah hydrocarbons: Utah Acad. Sci., Trans., vol. 1, pp. 78–95, February, 1918.

Barnett, Leon H.

1. The chemistry of the earth's core: Jour. Geology, vol. 32, no. 7, pp. 615–635, October–November, 1924.

Barnett, V. H. See Dobbin, 3.

Barrabé, Louis.

1. Le pétrole à la Martinique: France, Office national des combustibles liquides, Ann., 3^e ann., no. 1, pp. 7–42, 5 figs., map, February, 1928.

Barrell, Joseph.

1. Grove Karl Gilbert; an appreciation: Sierra Club Bull., vol. 10, no. 4, pp. 397–399, January, 1919.
2. Sources and tendencies in American geology: Sci. Monthly, vol. 8, no. 3, pp. 193–206, March, 1919. Abstract, Geol. Soc. America, Bull., vol. 30, p. 77, March 31, 1919.
3. The place of modern languages in research, particularly geological research: Sci. Monthly, vol. 8, no. 6, pp. 481–495, June, 1919.
4. The nature and bearings of isostasy: Am. Jour. Sci., 4th ser., vol. 48, pp. 281–290, October, 1919.
5. The status of the theory of isostasy: Am. Jour. Sci., 4th ser., vol. 48, pp. 291–338, 5 figs., October, 1919.
6. (Edited by H. H. Robinson). The Piedmont terraces of the northern Appalachians: Am. Jour. Sci., 4th ser., vol. 49, pp. 227–258, 327–362, 407–428, 18 figs., 2 pls., April–June, 1920.
7. Relations of subjacent igneous invasion to regional metamorphism: Am. Jour. Sci., 5th ser., vol. 1, nos. 1–3, pp. 1–19, 174–186, 255–267, January–March, 1921.
8. The nature and environment of the Lower Cambrian sediments of the southern Appalachians: Am. Jour. Sci., 5th ser., vol. 9, pp. 1–20, 2 figs., January, 1925.
9. Marine and terrestrial conglomerates: Geol. Soc. America, Bull., vol. 36, no. 2, pp. 279–341, 6 figs., June 30, 1925.

Barrell, Joseph—Continued.

10. Geological relations of earth condensation and resulting acceleration in rotation: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 408-432, 499-529, November and December, 1925; vol. 11, pp. 27-41, 11 figs., January, 1926.
11. On continental fragmentation and the geologic bearing of the moon's surficial features: *Am. Jour. Sci.*, 5th ser., vol. 13, pp. 283-314, 4 figs., April, 1927.

Barrera, Tomás.

1. Informe preliminar de las zonas mineralizadas comprendidas entre las estaciones de Magdalena, Jalisco, y Tepic, Mayarit, á uno y otro lado de la vía del Ferrocarril Sud-Pacífico: *Mexico, Inst. geol., Foli. de divulg.*, no. 21, 27 pp., November, 1926.
2. (and Segura, David). Itinerarios geológicas en el estado de Michoacán: *Mexico, Inst. geol., Bol. no. 46*, pp. 3-46, 25 pls. (incl. maps), 1927.
3. Informe geológico del criadero y mina de Santa Rosa pertenecientes á la Santa Rosa Mining Co., distrito de Mazapil, estado de Zacatecas: *Mexico, Inst. geol., Bol. no. 46*, pp. 47-72, 19 pls. (incl. maps), 1927.

Barrett, B. H. See Gregory, J. W., 4, 5.

Barrett, Edward. See also Bennett, L. F., 2.

1. Forty first annual report of department of geology and natural resources, Indiana. 123 pp., 15 pls., 11 figs., 7 maps, Fort Wayne, Ind., 1917.
2. The dunes of northwestern Indiana: *Indiana, Dept. Geology and Nat. Res.*, 41st Ann. Rept., pp. 11-27, 9 pls., 1917.
3. The beautiful Shades: *Indiana, Dept. Geology and Nat. Res.*, 41st Ann. Rept., pp. 80-89, 11 figs., 1917.
4. The canyon of McCormick's Creek: *Indiana, Dept. Geology and Nat. Res.*, 41st Ann. Rept., pp. 90-99, 8 pls., 1917.
5. Structural geology [of oil and gas fields]: *Indiana, Dept. Geology and Nat. Res.*, 41st Ann. Rept., pp. 100-112, map, 1917.
6. Report of department of geology and natural resources. *Indiana, Year Book 1917*, pp. 234-241, 1918.
7. Report of the department of geology and natural resources (forty-third annual report): *Indiana, Year Book 1918*, pp. 195-255, 1919.
8. (and Dove, Leonard P.). Workable coal seams of Indiana; pyrite in the coals of Indiana: *Indiana, Year Book 1918*, pp. 219-238, 1919.

Barrett, L. P.

1. Huronian slate areas of northeastern Baraga County [Michigan] (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 117, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, pp. 68-69, February, 1927.

Barrett, Nellie Okla.

1. Petroleum in Illinois in 1917 and 1918: *Illinois State Geol. Survey, Bull.* no. 40, pp. 9-20, 1919.
2. Mineral resources in Illinois in 1916: *Illinois State Geol. Survey, Bull.* no. 36, pp. 19-70, 5 figs., 1920.
3. Mineral resources in Illinois in 1917 and 1918: *Illinois State Geol. Survey, Bull.* no. 38, pp. 25-112, 1922.
4. Notes on Illinois bituminous shales, including results of their experimental distillation: *Illinois, State Geol. Survey, Bull.* no. 38, pp. 441-460, 4 figs., 1922.

Barrett, S. A.

1. Field studies for the catlinite and quartzite groups: Milwaukee, Public Mus., Year Book, 1924, vol. 4, pp. 7-20, 13 figs., October 9, 1926.

Barringer, Daniel Moreau, 1860-1929.

1. Further notes on Meteor Crater in northern central Arizona (No. 2): Acad. Nat. Sci. Philadelphia, Proc., vol. 76, pp. 275-278, 1 pl., 1924.
2. Volcanoes or cosmic shell-holes; a discussion of the origin of the craters on the moon and of other features of her surface: Sci. Am., vol. 131, no. 1, pp. 10-11, 62-63, 3 figs., July, no. 2, pp. 102, 142-144, August, 1924.
3. Exploration at Meteor Crater [Arizona]: Eng. and Min. Jour.-Press, vol. 121, no. 2, p. 59, January 9; no. 11, pp. 450-451, March 13; no. 19, p. 771, May 8, 1926.

Barringer, Daniel Moreau, jr.

1. The most fascinating spot on earth [Meteor Crater, Arizona]: Sci. Am., vol. 137, nos. 1, 2, and 3, pp. 52-54, 144-146, 244-246, 22 figs., July, August, and September, 1927.

Barrois, Charles.

1. Notice nécrologique sur le géologue C. D. Walcott: Acad. Sci. Paris. Compt. Rend., t. 184, no. 9, pp. 489-493, February 28, 1927.

Bartle, Glenn G.

1. A change of drainage of Raccoon Creek, Parke County, Indiana: Indiana Acad. Sci., Proc. 39th Ann. Meeting, 1923, vol. 33, pp. 63-68, 1 fig., 1924.
2. Plant life as possible source of petroleum deposits: Oil Weekly, vol. 38, no. 5, pp. 46, 48, July 24, 1925.

Bartlett, Albert B.

1. Twelfth biennial report of the State geologist [of Wyoming] for the period October 1, 1922, to and including September 30, 1924. 41 pp., map, tables, Cheyenne, Wyoming, 1924.
2. Oil and gas developments of the Laramie and Medicine Bow districts: Wyoming, State Geologist, Press Bull. no. 15, 7 pp., April 1, 1924. [Mimeographed.]
3. The mineral hot springs of Wyoming: Wyoming, Geologist's Office, Bull. no. 16 [in error for 19], 15 pp., 5 figs., May 6, 1926.
4. Atlantic City-South Pass gold mining district: Wyoming, Geologist's Office, Bull. no. 20, 23 pp., 2 figs., July 15, 1926.
5. Thirteenth biennial report of the State geologist [of Wyoming] for the period October 1, 1924, to September 30, 1926. 29 pp., 1 pl., tables, Cheyenne, Wyoming [1926].
6. Mineral resources of Platte County, Wyoming: Min. Jour., Phoenix, Ariz., vol. 11, no. 21, pp. 3-4, March 30, 1928.

Bartlett, James.

1. Gravel deposits of the St. Clair River: Ontario Dept. Mines, 31st Ann. Rept., vol. 31, pt. 1, pp. 53-61, 2 figs., 1 pl., 1924.

Barton, Donald Clinton.

1. The Palangana salt dome, Duval County, Texas: Econ. Geology, vol. 15, no. 6, pp. 497-510, 3 figs., September, 1920.
2. The West Columbia oil field, Brazoria County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, p. 102 (abstract), no. 2, pp. 212-251, 15 figs. (with discussion by J. B. Overstreet, I. C. White, and W. E. Pratt, pp. 325-326), March-April, 1921.

Barton, Donald Clinton—Continued.

3. Occurrence of gypsum in Gulf coast salt domes: *Econ. Geology*, vol. 17, no. 2, pp. 141-143, March-April, 1922.
4. The salt domes of south Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 536-589, 10 figs., May-June, 1925; *Geology of salt dome oil fields*, pp. 718-771, 10 figs., 1926.
5. (and Paxson, Roland B.). The Spindletop salt dome and oil field, Jefferson County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 594-612, 5 figs., May-June, 1925; *Geology of salt dome oil fields*, pp. 478-496, 5 figs., 1926.
6. Geophysical methods in the Gulf Coastal Plain: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 669-671, May-June, 1925.
7. Pine Prairie salt dome [Evangeline Parish, Louisiana]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 4, pp. 738-755, 5 figs., July, 1925; *Geology of salt dome oil fields*, pp. 419-436, 5 figs., 1926.
8. Salt-dome sulphur deposits of Texas Gulf coast: *Pan-Am. Geologist*, vol. 44, no. 1, pp. 59-60, August, 1925.
9. The American salt-dome problems in the light of the Rumanian and German salt domes: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 9, pp. 1227-1268, 13 figs., 2 pls., December, 1925; *Geology of salt dome oil fields*, pp. 167-208, 13 figs., 2 pls., 1926.
10. (and Mason, S. L.). Further note on barite pisolites from the Batson and Saratoga oil fields: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 9, pp. 1294-1295, December, 1925.
11. Notes on "paraffin dirt": *Min. Mag.*, vol. 33, no. 6, pp. 343-347, December, 1925.
12. (and Goodrich, R. H.). The Jennings oil field, Acadia Parish, Louisiana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 1, pp. 72-92, 6 figs., 1 pl., January, 1926; *Geology of salt dome oil fields*, pp. 398-418, 6 figs., 1 pl., 1926.
13. The Gulf Coast oil fields of southeast Texas and southwest Louisiana: *Internationale Bergwirtschaft*, Jg. 1, H. 9-10, pp. 244-253, 2 figs., June-July, 1926.
14. The indications of the fields in the Mid-Continent and Gulf Coastal Plain of the United States: *Inst. Petroleum Technologists, Jour.*, vol. 13, no. 61, pp. 333-339, April, 1927.
15. Applied geophysical methods in America: *Econ. Geology*, vol. 22, no. 7, pp. 649-668, November, 1927; *Queensland Gov't. Min. Jour.*, vol. 29, pp. 23-27, January 14, 1928.
16. The Eötvös torsion balance method of mapping geologic structure: *Am. Inst. Min. and Met. Eng., Tech. Pub.* no. 50, 51 pp., 13 figs., February, 1928; abstract, *Mining and Metallurgy*, vol. 9, no. 254, p. 83, February, 1928.
17. The economic importance of salt domes: *Texas, Univ., Bull.*, no. 2801, pp. 7-53, 6 figs. (incl. maps), 1928.
18. Meandering in tidal streams: *Jour. Geology*, vol. 36, no. 7, pp. 615-629, 4 figs., October-November, 1928.

Bartram, John G.

1. (and Roark, Louis). The Healdton field, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 4, pp. 469-474, 1 fig., July-August, 1921.
2. Oil development in southern Wyoming: *Mining and Metallurgy*, vol. 5, no. 216, pp. 583-585, December, 1924.

Bartram, John G.—Continued.

3. Occurrence of black oil in Wyoming: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 4, pp. 443-448, 1 fig., April, 1926.

Barwick, John S.

1. The Salina Basin of north-central Kansas (with discussion by Raymond C. Moore, Roy H. Hall, C. R. Thomas, John L. Rich, and Anthony Folger): Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 2, pp. 177-199, 5 figs. (incl. map), February, 1928.

Bascom, Florence.

1. The physiography of Mount Desert [Island]: Geog. Soc. Philadelphia, Bull., vol. 17, no. 4, pp. 117-130, 4 pls., map, October, 1919.
2. (and Miller, B. L.). Description of the Elkton and Wilmington quadrangles, Maryland-Delaware-New Jersey-Pennsylvania: U. S. Geol. Survey, Geol. Atlas, Elkton-Wilmington folio (no. 211) 22 pp., 4 maps, 1920.
3. The use of the two-circle contact goniometer in teaching crystallography: Am. Mineralogist, vol. 5, no. 3, pp. 45-50, 1 fig., March, 1920.
4. Cycles of erosion in the Piedmont province of Pennsylvania: Jour. Geology, vol. 29, no. 6, pp. 540-559, 25 figs., September-October, 1921.
5. The resuscitation of the term Bryn Mawr gravel; U. S. Geol. Survey, Prof. Paper 132, pp. 117-119, November 12, 1924.
6. Structural and physiographic features of the Piedmont province of Pennsylvania (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 211, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 4, p. 319, May, 1927.
7. Fifty years of progress in petrography and petrology, 1876-1926: Johns Hopkins Univ., Studies in Geology, no. 8, pp. 33-82, 1927.

Bass, Nathan W. See also Rubey, 3.

1. Geologic structure of the Dakota sandstone in western Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 6, pp. 1019-1023, 2 figs., September, 1925.
2. Geologic investigations in western Kansas, with special reference to oil and gas possibilities; Geology of Ellis County; Geology of Hamilton County; Geologic structure of the Dakota sandstone; Structure and limits of the Kansas salt beds; Kansas, State Geol. Survey, Bull. 11, 95 pp., 27 figs., 9 pls. (incl. maps) [1926].
3. The origin of the asymmetrical stream valleys of Kansas (abstract): Washington Acad. Sci., Jour., vol. 18, no. 9, p. 266, May 4, 1928.

Bassett, Charles Fernando.

1. The Devonian strata of the Alto Pass quadrangle: Illinois State Acad. Sci., Trans., vol. 18, pp. 360-368, 2 figs., 1 pl., 1925.

Bassler, Harvey. See also Reeside, 2, 4; Swartz, C. K., 1, 2.

1. A sporangiophoric lepidophyte from the Carboniferous [*Cantheliophorus*]: Bot. Gazette, vol. 68, no. 2, pp. 73-108, 3 pls., August, 1919.
2. (and Reeside, J. B., jr.). Oil prospects in Washington County, Utah: U. S. Geol. Survey, Bull. 726, pp. 87-107, 4 figs. (maps), August 15, 1921.

Bassler, Ray Smith. See also Canu; Galloway, 4; Merrill, 48; Stose, 3; Swartz, C. K., 9; Twenhofel, 30; Ulrich, 4, 8, 9, 13; Wade, B., 3.

1. Cambrian and Ordovician: Maryland Geol. Survey, 424 pp., 58 pls. (incl. map), 27 figs. (mainly paleogeographic maps), 1919.

Bassler, Ray Smith—Continued.

2. Proceedings of the tenth annual meeting of the Paleontological Society, held at Baltimore, Maryland, December 28, 1918: *Geol. Soc. America, Bull.*, vol. 30, pp. 143-164, March 31, 1919.
3. Proceedings of the eleventh annual meeting of the Paleontological Society, held at Boston, Massachusetts, December 30-31, 1919: *Geol. Soc. America, Bull.*, vol. 31, pp. 197-232, March 31, 1920.
4. Proceedings of the twelfth annual meeting of the Paleontological Society, held at Chicago, Illinois, December 28-30, 1920: *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 119-156, March 31, 1921.
5. Paleontological exhibits at the U. S. National Museum (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 126, March 31, 1921.
6. The Bryozoa, or moss animals: *Smithsonian Inst., Ann. Rept.*, 1920, pp. 339-380, 16 figs., 4 pls., 1922.
7. Proceedings of the thirteenth annual meeting of the Paleontological Society, held at Amherst, Massachusetts, December 28-30, 1921: *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 191-222, March 31, 1922.
8. Mohawkian and Cincinnati rocks of central Tennessee (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 207, March 31, 1922.
9. Proceedings of the fourteenth annual meeting of the Paleontological Society, held at Ann Arbor, Michigan, December 28-30, 1922: *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 121-142, March 30, 1923.
10. Embayments and overlaps in central Tennessee (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 132, March 30, 1923.
11. The problem of fossil multilamellar invertebrates (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 133-134, March 30, 1923.
12. Proceedings of the fifteenth annual meeting of the Paleontological Society, held at Washington, D. C., December 27-29, 1923: *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 169-200, March 30, 1924.
13. Geological features of the eastern highland rim of Tennessee (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 186-187, March 30, 1924.
14. Sink-hole structure in central Tennessee (abstract): *Washington Acad. Sci., Jour.*, vol. 14, no. 15, p. 374, September 19, 1924.
15. Proceedings of the sixteenth annual meeting of the Paleontological Society, held at Ithaca, New York, December 29-31, 1924: *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 211-240, March 30, 1925.
16. Classification and stratigraphic use of conodonts (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 218-220, March 30, 1925.
17. Early Mississippian rocks of northern Tennessee (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 221, March 30, 1925.
18. The stratigraphic use of conodonts (abstract): *Washington Acad. Sci., Jour.*, vol. 16, no. 3, pp. 72-73, February 4, 1926.
19. Proceedings of the seventeenth annual meeting of the Paleontological Society, held at New Haven, Connecticut, December 28-30, 1925: *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 225-254, March 30, 1926.
20. Structural contouring in areas of unconformable formations with variable thickness (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 242, March 30, 1926.

Bassler, Ray Smith—Continued.

21. Proceedings of the eighteenth annual meeting of the Paleontological Society, held at Madison, Wisconsin, December 27–29, 1926: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 219–244, March 30, 1927.
22. A new early Ordovician sponge fauna: Washington Acad. Sci., Jour., vol. 17, no. 15, pp. 390–394, September 19, 1927.
23. Proceedings of the nineteenth annual meeting of the Paleontological Society, held at Cleveland, Ohio, December 29–31, 1927: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 281–312, March 30, 1928.
24. Crinoidal affinities of *Lichenocrinus* (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 298, March 30, 1928.

Bastin, Edson Sunderland. See also Bateman, 10; Knopf, E. B., 1.

1. (and Laney, F. B.). The genesis of the ores at Tonopah, Nevada (U. S. Geol. Survey, Prof. Paper 104, 1918) (abstract by R. W. Stone): Washington Acad. Sci., Jour., vol. 9, no. 11, pp. 317–318, June 4, 1919.
2. Antimony in 1917: U. S. Geol. Survey, Mineral Resources, 1917, pt. 1, pp. 653–663, 1 fig. 1 pl., May 13, 1919.
3. (and McCaskey, H. D.). The work on mineral resources done by the United States Geological Survey: Min. and Sci. Press, vol. 121, pp. 166–168, July 31, 1920.
4. Bonanza ores of the Comstock lode, Virginia City, Nevada: U. S. Geol. Survey, Bull. 735, pp. 41–63, 9 figs., March 29, 1922.
5. Silver enrichment in the San Juan Mountains, Colorado: U. S. Geol. Survey, Bull. 735, pp. 65–129, 19 figs., June 30, 1922.
6. Primary native silver ores near Wickenburg, Arizona, and their bearing on the genesis of the silver ores of Cobalt, Ontario: U. S. Geol. Survey, Bull. 735, pp. 131–155, 14 figs., Aug. 2, 1922.
7. Supergene processes at Neihart, Montana: Econ. Geology, vol. 18, no. 1, pp. 87–93, January–February, 1923.
8. Origin of certain rich silver ores near Chloride and Kingman, Arizona: U. S. Geol. Survey, Bull. 750, pp. 17–39, 12 figs., February 23, 1924.
9. Primary native silver ores of South Lorrain near Cobalt, Ontario (abstract, with discussion by T. L. Walker): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 126–127, March 30, 1924; abstract, Pan-Am. Geologist, vol. 41, no. 2, pp. 159–160, March, 1924.
10. Observations on the rich silver ores of Aspen, Colorado: U. S. Geol. Survey, Bull. 750, pp. 41–62, 10 figs., 1 pl., September 19, 1924.
11. Geology—a growing science: Eng. and Min. Jour.-Press, vol. 118, no. 15, pp. 578–579, October 11, 1924.
12. Primary native silver ores of South Lorrain and Cobalt, Ontario: Econ. Geology, vol. 20, no. 1, pp. 1–24, 5 figs., 7 pls., January–February, 1925.
13. (and others). The presence of sulphate reducing bacteria in oil field waters: Science, new ser., vol. 63, pp. 21–24, January 1, 1926.
14. A hypothesis of bacterial influence in the genesis of certain sulphide ores: Jour. Geology, vol. 34, no. 8, pp. 773–792, 3 figs., November–December, 1926; abstract, Geol. Soc. America, Bull., vol. 38, no. 1, pp. 131–132, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 76, February, 1927.

Bastin, Edson Sunderland—Continued.

15. The problem of the natural reduction of sulphates: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 12, pp. 1270-1299, 8 figs., December, 1926; abstract, Geol. Soc. America, Bull., vol. 37, no. 1, pp. 146-147, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 1, pp. 94-95, February, 1926.

Bateman, Alan Mara. See also Howe, E., 1; Lindgren, 18; Wheeler, H. A., 3.

1. Military and geologic mapping—a plane-table: Geol. Soc. America, Bull., vol. 30, pp. 405-414, 5 figs., September 30, 1919.
2. Why ore is where it is: Econ. Geology, vol. 14, no. 8, pp. 640-642, December, 1919.
3. (and McLaughlin, D. H.). Geology of the ore deposits of Kennecott, Alaska: Econ. Geology, vol. 15, no. 1, pp. 1-80, 6 pls., 12 figs., January-February, 1920.
4. Geology of the ore deposits of Kennecott, Alaska (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, pp. 157-158, March 31, 1920.
5. Notes on the Kennecott Glacier, Alaska (abstract with discussion by R. T. Chamberlin and A. O. Hayes): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 52-53, March 31, 1921.
6. Economic geologists and literature: Econ. Geology, vol. 17, no. 3, pp. 214-215, May, 1922.
7. Kennecott Glacier of Alaska: Geol. Soc. America, Bull., vol. 33, no. 3, pp. 527-539, 7 figs., September 1, 1922.
8. Croppings of ore deposits: Econ. Geology, vol. 17, no. 8, pp. 703-708, December, 1922.
9. Primary chalcocite; Bristol copper mine, Connecticut: Econ. Geology, vol. 18, no. 2, pp. 122-166, 6 figs., March, 1923.
10. An Arizona asbestos deposit (with discussion by G. F. Loughlin, E. S. Bastin, H. M. Chance, J. E. Spurr, and A. C. Spencer): Econ. Geology, vol. 18, no. 7, pp. 663-683, 3 figs., October-November, 1923.
11. The Eötvös torsion balance: Econ. Geology, vol. 19, no. 1, pp. 84-86, January-February, 1924.
12. Geology of the Beatson copper mine, Alaska: Econ. Geology, vol. 19, no. 4, pp. 338-368, 3 figs., June-July, 1924.
13. Angular inclusions and replacement deposits (with discussion by J. E. Spurr and L. C. Graton): Econ. Geology, vol. 19, no. 6, pp. 504-520, 6 figs., September-October, 1924.
14. Notes on silver-lead deposits of Slocan district, British Columbia, Canada: Econ. Geology, vol. 20, no. 6, pp. 554-572, September-October, 1925.

Bateman, G. C.

1. The Cobalt [Ontario] silver district: Canadian Min. Jour., vol. 45, no. 25, pp. 595-597, 3 figs., June 20, 1924.
2. Alfred Granville Burrows: Eng. and Min. Jour.-Press, vol. 120, no. 13, p. 484, portr., September 26, 1925.

Bates, Mowry, 1875-1926. See also Lupton, 1; Semmes, 3.

1. A concrete example of the use of well logs [Red River-Crichton oil field, Louisiana]: Am. Inst. Min. and Met. Eng., Trans., vol. 61, pp. 590-597, 3 figs., 1920.

Bather, Francis Arthur.

1. A mystery crinoid; on *Mysticocrinus*, a new genus of Silurian Crinoidea, by Frank Springer: Geol. Mag., new ser., dec. 6, vol. 6, pp. 182-183, April, 1919.

Bather, Francis Arthur—Continued.

2. The antiquity of parasitic disease; on the parasitism of Carboniferous crinoids: *Geol. Mag.*, new ser., dec. 6, vol. 6, pp. 276–277, June, 1919.
3. Fossils and life; the differentia of paleontology: *Science*, new ser., vol. 52, pp. 257–264, September 17, 1920.
4. Fossils and life: *Sci. Monthly*, vol. 11, no. 5, pp. 429–435, November, 1920.
5. Growth stages of the blastoid, *Orophocrinus stelliformis*: *Jour. Geology*, vol. 30, no. 1, pp. 73–76, January–February, 1922.
6. Habits of some North American cystids (abstract): *Pan-Am. Geologist*, vol. 42, no. 1, p. 69, August, 1924.
7. The habits of some North American cystids (abstract): *British Assoc. Adv. Sci.*, Rept. 92d Meeting, p. 381, 1925.
8. *Dendrocystis* in North America: *Canada, Geol. Survey, Bull.* no. 49, pp. 5–8, 1 fig., 1928.

Bauer Clyde Max. See also Clark, R. W., 1.

1. (and Reeside, J. B., jr.) Coal in the middle and eastern parts of San Juan County, New Mexico: *U. S. Geol. Survey, Bull.* 716, pp. 155–237, 19 pls. (including maps), February 11, 1921. Abstract, *Washington Acad. Sci., Jour.*, vol. 11, no. 17, p. 419, October 19, 1921.
2. (and Herald, F. A.). Lignite in the western part of the Fort Berthold Indian Reservation south of Missouri River, North Dakota: *U. S. Geol. Survey, Bull.* 726, pp. 109–172, 17 pls., 4 figs., December 3, 1921.
3. (and Robinson, Ernest Guy). Comparative stratigraphy in Montana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 2, pp. 159–178, 3 figs., March–April, 1923.
4. The Ekalaka lignite field, southeastern Montana: *U. S. Geol. Survey, Bull.* 751, pp. 231–267, 1 fig., 5 pls. (incl. maps), December 12, 1924.
5. Lake Basin oil field [Stillwater County, Montana]: *Mining and Metallurgy*, vol. 6, no. 217, pp. 22–24, January, 1925.
6. Quartzite pebbles at the base of the Lance formation in Montana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 2, pp. 344–346, March–April, 1925.
7. Oil and gas fields of the Texas Panhandle: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 8, pp. 733–746, 1 fig., 1 pl. (map), August, 1926.
8. Gas a big factor in the Texas Panhandle: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 2, pp. 165–176, 4 figs., February, 1928.

Bauer, Lawson H. See also Larsen, 23; Lewis, 8; Palache, 23, 27, 30.

1. (and Palache, C.). Hyalophane from Franklin Furnace, New Jersey: *Am. Mineralogist*, vol. 11, no. 7, pp. 172–174, July, 1926.
2. (and Berman, H.). Löllingite from Franklin, New Jersey: *Am. Mineralogist*, vol. 12, no. 2, pp. 39–43, 2 figs., February, 1927.
3. (and Berman, Harry). Friedelite, schallerite, and related minerals: *Am. Mineralogist* vol. 13, no. 7, pp. 341–348, July, 1928.

Bayley, William Shirley. See also Ries, 5.

1. Kaolin in North Carolina, with a brief note on hydromica: *Econ. Geology*, vol. 15, no. 3, pp. 236–246, April–May, 1920.
2. The magnetitic ores of North Carolina—their origin: *Econ. Geology*, vol. 10 no. 2, pp. 142–152, 1 pl., March, 1921.

Bayley, William Shirley—Continued.

3. Magnetites of North Carolina; their origin (abstract with discussion by T. L. Watson): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 64-65, March 31, 1921.
4. A magnetite-marble ore at Lansing, North Carolina: *Elisha Mitchell Sci. Soc. Jour.*, vol. 37, nos. 3-4, pp. 138-152, 4 pls., March, 1922.
5. General features of the brown hematite ores of western North Carolina: *U. S. Geol. Survey, Bull.* 735, pp. 157-208, 10 figs., 3 pls. (incl. map), October 17, 1922.
6. General features of the magnetite ores of western North Carolina and eastern Tennessee: *U. S. Geol. Survey, Bull.* 735, pp. 209-270, 6 figs., December 8, 1922.
7. The magnetic iron ores of east Tennessee and western North Carolina: *Tennessee, Division of Geology, Bull.* 29, 252 pp., 28 figs., 23 pls., 1923.
8. Studying mines with a microscope: *Illinois State Acad. Sci., Trans.*, vol. 16, pp. 27-28, 1923.
9. The occurrence of rutile in the titaniferous magnetites of western North Carolina and eastern Tennessee: *Econ. Geology*, vol. 18, no. 4, pp. 382-392, 1 pl., June-July, 1923.
10. The kaolins of North Carolina: *North Carolina Geol. and Econ. Survey, Bull.* no. 29, 132 pp., 14 figs., 2 pls. (incl. map), 1925.
11. Deposits of brown iron ores (brown hematite) in western North Carolina: *North Carolina Geol. and Econ. Survey, Bull.* no. 31, 76 pp., 11 figs., 9 pls. (incl. map), 1925.
12. Contributions of Hopkins to geology: *Johns Hopkins Univ., Studies in Geology*, no. 8, pp. 9-24, 1927.
13. Geology of the Tate quadrangle, Georgia: *Georgia Geol. Survey, Bull.* no. 43, 170 pp., 2 figs., 22 pls., 2 maps, 1928.

Beal, Carl H.

1. The classification of undeveloped oil land for purposes of valuation: *Econ. Geology*, vol. 15, no. 4, pp. 315-327, 1 fig., June, 1920; *Inst. Petroleum Technologists, Jour.*, vol. 6, no. 23, pp. 297-306, July, 1920.

Beals, Colonzo C. See also Erni, 1.

1. Soil survey of Cass County: *Indiana Acad. Sci., Proc.* 1918, pp. 186-204, map, 1919.

Bean, Ernest F. See also Hotchkiss, 9.

1. Economic geology and highway construction: *Econ. Geology*, vol. 16, no. 3, pp. 215-221, April-May, 1921.
2. Location of Wisconsin road material: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 341-343, May, 1922.
3. Report of the director of the survey: *Wisconsin, Geol. and Nat. Hist. Survey, 15th Bienn. Rept.*, 44 pp., 1 fig., 1926.

Beard, Donald Putnam.

1. The impact origin of the moon's craters: *Popular Astronomy*, vol. 25, no. 3, pp. 167-177, 1 fig., 1 pl., March, 1917.

Beaumont, A. B.

1. Soil shifting in the Connecticut Valley: *Science, new ser.*, vol. 56, pp. 282-283, September 8, 1922.

Becker, Clyde M.

1. Geology of Caddo and Grady counties, Oklahoma: Oklahoma Geol. Survey, Bull. no. 40-I, 18 pp., 4 figs., and 3 pls. (incl. maps), March, 1927.

Becker, George Ferdinand, 1847-1919.

1. Mechanics of the Panama Canal slides: Nat. Acad. Sci., Mem., vol. 18, pp. 67-77, 1924.

Becking, L. B.

1. (and others.) Preliminary statement regarding the diatom "epidemics" at Copalis Beach, Washington, and an analysis of diatom oil: Econ. Geology, vol. 22, no. 4, pp. 356-368, 11 figs., June-July, 1927.

Beckman, H. C.

1. Water resources of Missouri: Missouri Bur. Geology and Mines, 2d ser., vol. 20, 424 pp., 12 pls., 1927.

Beckner, Lucien.

1. Eastern Kentucky's seashore (abstract): Science, new ser., vol. 58, p. 184, September 7, 1923; Kentucky Acad. Sci., Trans., vol. 1, p. 139, 1924.
2. Kentucky petroleum problems (abstract): Kentucky Acad. Sci., Trans., vol. 1, p. 110, 1924.
3. Cumberland County oil horizons: Kentucky Acad. Sci., Trans., vol. 2, pp. 23-28, 1927.

Beckstrom, R. C. See also Van Tuyl, 12.

1. (and Van Tuyl, F. M.). Compaction as a cause of the migration of petroleum: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 11, pp. 1049-1055, 2 figs., November, 1928.

Beckwith, H. T.

1. Oil and gas in Oklahoma; geology of Osage County: Oklahoma Geol. Survey, Bull. no. 40-T, 63 pp., 17 figs., 4 pls. (incl. map), February, 1928.

Beckwith, Radcliffe H.

1. Geological setting of Idaho batholith: Pan-Am. Geologist, vol. 45, no. 5, pp. 359-376, 3 pls. (incl. map), June, 1926.
2. Quartz veins of the Buffalo Hump [mining district, Idaho]: Pan-Am. Geologist, vol. 46, no. 2, pp. 111-120, 1 fig., September, 1926.
3. Ore deposition at Buffalo Hump [Idaho]: Pan-Am. Geologist, vol. 48, no. 3, pp. 191-194, 1 fig., 2 pls., October, 1927.
4. The geology and ore deposits of the Buffalo Hump district: New York Acad. Sci., Annals vol. 30, pp. 263-296, 10 figs. (incl. map), October 17, 1928.

Beede, Joshua William. See also Lee, W. T., 3.

1. Notes on the structures and oil showings in the red beds of Coke County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 117-123, 1919.
2. Further notes on the structure near Robert Lee, Coke County, Texas: Texas, Univ. Bull., no. 1847, pp. 3-7, 1 pl., August 20, 1918 [1920].
3. Notes on the geology and oil possibilities of the northern Diablo Plateau in Texas: Texas, Univ., Bull. no. 1852, 40 pp., 1 fig., 7 pls. (incl. map) [1920].
4. The Wamego anticline: Kansas Acad. Sci., Trans., vol. 29, pp. 141-142, 1920.

Beede, Joshua William—Continued.

5. Correlation of the upper Paleozoic rocks of the Hueco Mountain region of Texas (abstract): *Science*, new ser., vol. 51, p. 494, May 14, 1920.
6. (and Bentley, W. P.). The geology of Coke County: Texas, Univ., Bull. no. 1850, 82 pp., 3 figs., 17 pls. (incl. map), March, 1921.
7. Age and development of red beds and terrestrial vertebrates of the Appalachian and Kansas-Texas sections: *Geol. Soc. America, Bull.*, vol. 33, no. 4, pp. 671-688, November 2, 1922; abstract, no. 1, p. 208, March 31, 1922.
8. Report on the oil and gas possibilities of the University Block 46 in Culberson County: Texas, Univ., Bull. no. 2346, 16 pp., 2 pls., December 8, 1923 [February, 1924].
9. (and Kniker, Hedwig T.). Species of the genus *Schwagerina* and their stratigraphic significance: Texas, Univ., Bull. no. 2433, 96 pp., 9 pls., map [1925?].
10. (and Christner, D. D.). The San Angelo formation: Texas, Univ., Bull. no. 2607, pp. 5-17, map, June, 1926.
11. (and Christner, D. D.). The geology of Foard County: Texas, Univ., Bull. no. 2607, pp. 18-53, 5 figs., map, June, 1926.

Beeson, J. J.

1. Mining districts and their relation to structural geology: *Am. Inst. Min. and Met. Eng., Trans.* [preprint], no. 1500, 36 pp., 9 figs., September, 1925; discussion by Charles Keyes and Charles A. Porter, no. 1512, pp. 4-10, 2 figs., December, 1925; abstract, *Mining and Metallurgy*, vol. 6, no. 224, p. 438, August, 1925.

Behre, Charles Henry, jr. See also Miller, B. L., 9.

1. Native antimony from Kern County, California: *Am. Jour. Sci.*, 5th ser., vol. 2, pp. 330-333, December, 1921.
2. Petrological abstracts and reviews: *Jour. Geology*, vol. 30, no. 5, pp. 401-410, July-August, 1922.
3. Structures in the slates of northeastern Pennsylvania (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 100-101, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, pp. 149-150, March, 1924.
4. A new field for the geologist (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 147-148, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 147, March, 1925.
5. Taconic folding in the Martinsburg shales (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 157-158, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, pp. 152-153, March, 1925.
6. Observations on structures in the slates of Northampton County, Pennsylvania: *Jour. Geology*, vol. 34, no. 6, pp. 481-506, 19 figs, August-September, 1926.
7. Slate in Northampton County, Pennsylvania: *Pennsylvania Geol. Survey*, 4th ser., Bull. M9, 308 pp., 49 figs., 39 pls. (incl. maps). 1927, abstract, *Chicago, Univ., Abstracts of Theses*, vol. 4, pp. 211-215, May, 1928.
8. Dikes and ores of the Mississippi Valley (discussion): *Eng. and Min. Jour.*, vol. 123, no. 13, pp. 531-532, March 26, 1927.

Behre, Charles Henry, jr.—Continued.

9. Geologic factors in the development of the eastern Pennsylvania slate belt: *Am. Inst. Min. and Met. Eng., Tech. Pub. no. 66*, 17 pp., 12 figs., February, 1928; *Trans.*, vol. 76, pp. 393–412, 12 figs., 1928; abstract, *Mining and Metallurgy*, vol. 9, no. 254, p. 81, February, 1928.
10. Martinsburg formation of eastern Pennsylvania (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 200–201, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 153, March, 1928.
11. The petrography of some slates (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, p. 171, 1928; *Ohio Jour. Sci.*, vol. 28, no. 3, p. 149, May, 1928.

Beidelman, J. C.

1. The zinc and lead deposits of Gaspesia [Quebec]: *Canadian Min. Jour.*, vol. 41, pp. 102–105, February 6, 1920.
2. Developing zinc and lead deposits in Gaspé Peninsula: *Canadian Inst. Min. and Met., Monthly Bull. no. 143*, pp. 129–147, 8 figs., March, 1924; *Trans.*, vol. 27, pp. 258–277, 8 figs. [1925].

Belanski, Charles Herbert, 1898–1929.

1. The Shellrock stage of the Devonian of Iowa: *Am. Midland Naturalist*, Notre Dame, Indiana, vol. 10, no. 10, pp. 317–370, 1 fig., July, 1927; vol. 11, no. 5, pp. 165–170, September, 1928.
2. Pentameracea of the Devonian of northern Iowa: *Iowa Univ., Studies*, vol. 12, no. 7, new ser. no. 148, 34 pp., 15 figs., 4 pls., February 1, 1928.
3. Descriptions of some typical fossils of the Shellrock stage [of the Devonian of Iowa]: *Am. Midland Naturalist*, vol. 11, no. 5, pp. 171–212, 4 figs., 6 pls., September, 1928.
4. Terebratulacea of the Devonian of northern Iowa: *Iowa Univ., Studies*, *Studies in Nat. Hist.*, vol. 12, no. 8, 29 pp., 15 figs., 4 pls., June 1, 1928.

Belknap, Ralph L. See Scott, I. D., 4.

Bell, Alfred Hannam. See also Clark, C. R., 1; Cockfield, 16.

1. Oil prospects in central Pike County: *Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum*, no. 3, pp. 7–10, 1 fig., July 24, 1926.
2. Oil investigations in the Centralia area; preliminary report: *Illinois State Geol. Survey, Press. Bull. Ser., Illinois Petroleum*, no. 4, pp. 6–12, 2 figs., August 28, 1926.
3. Oil investigations in the Centralia area: *Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum*, no. 5, pp. 1–10, October 16, 1926.
4. Oil possibilities of the Ayers anticline [Bond County]: *Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum*, no. 5, pp. 15–18, 1 fig., October 16, 1926.
5. The Sorento dome: *Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum*, no. 6, 11 pp., 3 figs., December 4, 1926.
6. Structure of Centralia and Sandoval oil fields, Illinois: *Illinois State Geol. Survey, Illinois Petroleum*, no. 10, pp. 1–12, 6 figs., July 23, 1927.
7. Recent development in the vicinity of Jacksonville: *Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum*, no. 11, 12 pp., 2 figs., September 3, 1927.

Bell, Alfred Hannam—Continued.

8. (and Workman, L. E.). The Media anticline, Henderson County, Illinois: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 13, 11 pp., 3 figs., January 28, 1928.
9. Recent development on the Ayers anticline [Bond County]: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 16, pp. 1-9, 4 figs., June 30, 1928.
10. Recent drilling northwest of St. Francisville, Lawrence County, Illinois: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 16, pp. 10-18, 1 fig., June 30, 1928.
11. Oil prospecting in western Illinois on the basis of the structure of coal beds: Illinois State Acad. Sci., Trans., vol. 20, pp. 293-296, 2 figs., March, 1928.
12. The geology of Whitehorse district, Yukon Territory (abstract): Chicago, Univ., Abstracts of Theses, Sci. Ser., vol. 4, pp. 217-222, May, 1928.

Bell, Charles N.

1. Mining methods of the Telluride district [Colorado]: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1295, 15 pp., 2 figs., February, 1924; abstract, Mining and Metallurgy, vol. 5, no. 206, pp. 91-93, 1 fig., February, 1924.

Bell, Harry Wesley.

1. (and Cattell, R. A.). The Monroe gas field, Ouachita, Morehouse, and Union parishes, Louisiana: Louisiana, Dept. Conservation, Bull. no. 9, 99 pp., 17 figs., 9 pls. (incl. maps), July, 1921.
2. (and Haury, P. S., and Kelly, R. B.). Preliminary report on the eastern part of the Smackover, Arkansas, oil and gas field. 48 pp., illus., map, published by Arkansas State Bureau of Mines . . . Little Rock, Arkansas [1923].
3. Subsurface conditions in the heavy oil producing area of Smackover, Arkansas: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 6, pp. 672-683, 2 figs., November-December, 1923.

Bell, James Mackintosh. See also Brunton, 10.

1. The nickel-copper mines of Sudbury: Min. Mag., vol. 23, no. 2, pp. 87-94, 3 figs., August, 1920.
2. The Porcupine gold field, Ontario: Min. Mag., vol. 23, no. 3, pp. 139-149, 7 figs., September, 1920.
3. The occurrence of silver ores in South Lorrain, Ontario, Canada: Inst. Min. and Met., Bull. no. 209, 17 pp., 3 figs., February, 1922; no. 210, pp. 1-14, March, 1922; Trans., vol. 31, pp. 304-332, 4 figs., 1922.
4. Deep-seated oxidation and secondary enrichment at the Keeley silver mine [near Cobalt, Ontario]: Econ. Geology, vol. 18, no. 7, pp. 684-694, October-November, 1923; Min. Mag., vol. 29, no. 6, pp. 373-376, 2 figs., December, 1923; Canadian Min. Jour., vol. 44, no. 51, pp. 998-1000, December 21, 1923.
5. South Lorrain silver district, Ontario: Am. Inst. Min. and Met. Eng., Trans., vol. 70, pp. 1043-1052, 4 figs., 1924; [preprint] no. 1286, 9 pp., 4 figs., January, 1924; abstract, Mining and Metallurgy, vol. 5, p. 33, January, 1924.
6. (and Thomson, Ellis). The effect of deep-seated alteration upon the mineralogical and geological features of the Keeley silver mine [Cobalt]: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 18-37, 1924; abstract, Pan-Am. Geologist, vol. 42, no. 1, p. 72, August, 1924; British Assoc. Adv. Sci., Rept. 92d Meeting, pp. 382-383, 1925.

Bell, James Mackintosh—Continued.

7. Canada's great mineral heritage: Canadian Min. Jour., vol. 45, no. 5, pp. 113-116, February 1, 1924.
8. (and Dorfman, André). Carbonaceous matter at Porcupine [Ontario]: Inst. Min. and Met., Bull. no. 236, 15 pp., May, 1924; discussion, no. 237, pp. 1-15, June, 1924; Min. Mag., vol. 30, no. 6, pp. 377-379, June, 1924.
9. (and O'Heir, H. B.). Structural control of the location of ore deposits, with especial reference to Cobalt, South Lorrain, and Porcupine: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, pt. 2, sec. 4, pp. 227-236, 3 pls. 1926.

Bell, Olin G.

1. A preliminary report on the clays of Florida (exclusive of fuller's earth): Florida State Geol. Survey, 15th Ann. Rept., 1922-23, pp. 53-260, 55 figs., 1924.

Bell, Robert N.

1. Mineral resources of Idaho. In Northwest Mines Handbook, vol. 1, pp. 27-30, published by Sidney Norman, Spokane, Washington, 1918.
2. Twentieth annual report of the mining industry of Idaho for the year 1918. 135 pp., illus. [1919].
3. The I. X. L. copper prospect [Heath mining district, Adams County, Idaho]: Eng. and Min. Jour., vol. 108, pp. 400-402, 4 figs., September 6, 1919.
4. Twenty-first annual report of the mining industry of Idaho for the year 1919. 181 pp., illus. [1920].
5. Twenty-second annual report of the mining industry of Idaho for the year 1920. 24 pp. [1921].

Bell, Walter Andrew. See also Hayes, A. O., 6.

1. The Carboniferous strata of Sydney district, Cape Breton, Nova Scotia: Canada, Geol. Survey, Summ. Rept., 1920, pt. E, pp. 17-18, 1921.
2. The Mississippian formations of the Horton-Windsor district, Nova Scotia: Am. Jour. Sci., 5th ser., vol. 1, no. 2, pp. 153-173, 2 figs., February, 1921.
3. Tertiary plant remains collected by G. S. Hume in the Mackenzie River basin: Canada, Geol. Survey, Summ. Rept., 1921, pt. B, p. 76, 1922.
4. A new genus of Characeae and new Merostomata from the coal measures of Nova Scotia: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 16, sec. 4, pp. 159-168, 1 pl., 1922.
5. Stratigraphy of Great Bras d'Or coal district, Victoria County, Cape Breton [Nova Scotia]: Canada, Geol. Survey, Mem. 133, pp. 90-104, 1 fig., 1923.
6. Correlation of the Minto coal horizon [Nova Scotia]: Canada, Geol. Survey, Summ. Rept. 1923, pt. C 2, pp. 23-32, 1924.
7. Investigations of coal-bearing formations in Nova Scotia: Canada, Geol. Survey, Summ. Rept. 1923, pt. C 2, pp. 33-40, 1924.
8. The subdivision of the Carboniferous rocks of the maritime provinces: Canadian Inst. Min. and Met., Monthly Bull., vol. 152, pp. 886-894, December, 1924; Trans., vol. 27, pp. 607-615 [1925]; Canadian Min. Jour., vol. 45, no. 47, pp. 1138-1141, 2 figs., November 21, 1924.

Bell, Walter Andrew—Continued.

9. The new Glasgow conglomerate member of Pictou County, Nova Scotia: Canadian Inst. Min. and Met., Bull., no. 158, pp. 605-634, 1 fig., June, 1925; Trans., vol. 28, pp. 447-476, 3 figs. [1926]; discussion, vol. 29, pp. 498-499 [1927]. In part, Canadian Min. Jour., vol. 47, no. 28, p. 694, July 9, 1926.
10. Carboniferous formations of Northumberland Strait, Nova Scotia; Canada, Geol. Survey, Summ. Rept., 1924, pt. C, pp. 142-180, 3 figs., 4 pls., 1926.
11. Minto coal basin, New Brunswick; paleontology and correlation: Canada, Geol. Survey, Mem. 151, pp. 18-19, 1926.
12. Prospects for petroleum in Lake Ainslie district, Cape Breton Island, with notes on the occurrence of barite and granite: Canada, Geol. Survey, Summ. Rept., 1926, pt. C, pp. 100-109, 1 fig. (map), 1 pl., 1927.
13. Outline of Carboniferous stratigraphy and geologic history of the maritime provinces of Canada: Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 75-108, 2 figs., May, 1927; abstract, p. xcvi, 1927.
14. Upper Cretaceous plants from Stikine River, Cassiar district, British Columbia: Canada, Geol. Survey, Bull. no. 49, pp. 23-25, 4 pls., 1928.
15. A new Cretaceous conifer from the Belly River formation of Alberta: Canada, Geol. Survey, Bull. no. 49, p. 26, 1 pl., 1928.
16. Mesozoic plants from the Mattagami series, Ontario: Canada, Geol. Survey, Bull. no. 49, pp. 27-30, 5 pls., 1928.

Belt, Ben C.

1. Chapeño salt dome, Tamaulipas, Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, pp. 134-135, January-February, 1925; Geology of salt dome oil fields, pp. 772-773, 1926.
2. Stratigraphy of the Tampico district of Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, pp. 136-144, January-February, 1925.

Benedict, P. C. See Fearing, 1.

Bengston, Nels A.

1. Notes on the physiography of Honduras: Geog. Rev., vol. 16, no. 3, pp. 403-413, 8 figs., July, 1926.

Bengzon, Ernesto.

1. Some notes and statistics on copper: Colorado School of Mines Mag., vol. 9, no. 11, pp. 299-303, 1 fig., November, 1919

Benjamin, Marcus.

1. The beginning of American geology: Science, new ser., vol. 56, pp. 480-481, October 27, 1922.

Bennett, Hugh Hammond.

1. The geographical relation of soil erosion to land productivity: Geol. Rev., vol. 18, no. 4, pp. 579-605, 24 figs., October, 1928.
2. Studies on soils which bear on sedimentation: Nat. Research Council, Reprint and Circ. Ser., no. 85, pp. 80-83, 1928.

Bennett, Lee Fent.

1. Geology and the war: Indiana Acad. Sci., Proc., 1918, pp. 56-59, 1919.
2. (and Barrett, Edward). The flints and cherts of Indiana: Indiana, Year Book, pp. 212-219, 1919.

Bensley, Benjamin Arthur.

1. A musk ox skull from Iroquois Beach deposits at Toronto; *Ovibos proximus*, sp. nov.: Toronto, Univ., Studies, Univ. ser., no. 23, 11 pp., 2 pls., 1923.

Benson, Allan L.

1. The story of geology, viii, 300 pp., illus., New York, Cosmopolitan Book Corporation, 1927.

Benson, William Noel.

1. Tectonic conditions accompanying intrusion of basic and ultra-basic igneous rocks: Geol. Soc. America, Bull., vol. 31, no. 1, pp. 144-148, March 31, 1920.
2. The tectonic conditions accompanying the intrusion of basic and ultra-basic igneous rocks: Nat. Acad. Sci., Mem., vol. 19, first mem., 90 pp., 18 figs., 1926.

Bentley, W. P. See Beede, 6.

Berg, J. E.

1. Some Coeur d'Alene geology [Idaho]: Mining and Metallurgy, vol. 8, no. 247, pp. 297-298, July, 1927.

Berger, Walter R.

1. The extent and interpretation of the Hogshooter gas sand [Washington County, Oklahoma]: Am. Jour. Sci., 4th ser., vol. 48, pp. 189-194, 2 figs., September, 1919. Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 212-216, 1 fig., 1919 (with discussion).
2. The relation between the structure and production in the Sallyards field, Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 2, pp. 276-281, 3 figs., March-April, 1921.

Berkey, Charles Peter. See also Jonas, 4.

1. Introduction to the geology of Porto Rico: New York Acad. Sci., Scientific Survey of Porto Rico and the Virgin Islands, vol. 1, pt. 1, pp. 11-29, 1 pl. (map), 3 figs., 1919.
2. Engineering geology in and after the war (abstract, with discussion by O. E. Meinzer): Geol. Soc. America, Bull., vol. 30, p. 81, March 31, 1919.
3. (and Rice, Marion). Geology of the West Point quadrangle, New York: New York State Mus. Bull, nos. 225-226, 152 pp., 56 pls., map, 1921.
4. A significant petrographic unconformity (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 58, March 31, 1921.
5. Rightful demesne of petrology: Pan-Am. Geologist, vol. 37, no. 5, pp. 353-356, June, 1922.
6. (and Sanborn, J. F.). Engineering geology of the Catskill water supply: Am. Soc. Civ. Eng., Proc., vol. 48, no. 7, pp. 1029-1595, 17 figs., 3 pls., September, 1922; discussion, no. 10, pp. 1889-1900, December, 1922; Trans., vol. 86, pp. 1-91, 17 figs., 3 pls., 1923.
7. Proceedings of the thirty-fifth annual meeting of the Geological Society of America, held at Ann Arbor, Michigan, Thursday-Saturday, December 28-30, 1922: Geol. Soc. America, Bull., vol. 34, no. 1, pp. 1-116, 3 pls., March 30, 1923.
8. Proceedings of the thirty-sixth annual meeting of the Geological Society of America, held at Washington, D. C., Thursday-Saturday, December 27-29, 1923: Geol. Soc. America, Bull., vol. 35, no. 1, pp. 1-160, 5 pls., March 30, 1924.

Berkey, Charles Peter—Continued.

9. The new petrology: New York State Mus. Bull. no. 251, pp. 105-118, 1924.
10. Edmund Otis Hovey (1862-1924): Science, new ser., vol. 60, pp. 559-560, December 19, 1924.
11. Proceedings of the thirty-seventh annual meeting of the Geological Society of America, held at Ithaca, New York, Monday-Wednesday, December 29-31, 1924: Geol. Soc. America, Bull., vol. 36, no. 1, pp. 1-198, 7 pls., March 30, 1925.
12. Proceedings of the thirty-eighth annual meeting of the Geological Society of America, held at New Haven, Connecticut, Monday-Wednesday, December 28-30, 1925; Geol. Soc. America, Bull., vol. 37, no. 1, pp. 1-206, March 30, 1926.
13. Early history of the earth: Nat. History (Am. Mus. Nat. Hist., Jour.), vol. 26, no. 4, pp. 375-382, 3 figs., July-August, 1926.
14. James Furman Kemp: Eng. and Min. Jour., vol. 122, no. 22, pp. 872-873, November 27, 1926; Min. and Met. Soc. America, Bull. no. 186 (vol. 19, no. 5), pp. 114-116, December, 1926; Science, new ser., vol. 64, pp. 639-642, December 31, 1926.
15. Proceedings of the thirty-ninth annual meeting of the Geological Society of America held at Madison, Wisconsin, Monday, Tuesday, and Wednesday, December 27, 28, and 29, 1926: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 1-192, 7 pls., March 30, 1927.
16. Proceedings of the fortieth annual meeting of the Geological society of America, held at Cleveland, Ohio, Thursday, Friday, and Saturday, December 29, 30, and 31, 1927: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 1-260, March 30, 1928.

Berman, Harry. See also Bauer, L. H., 2; Foshag, 28; Larsen, 17, 23; Palache, 25, 27, 30; Shannon, 65.

1. Notes on dachiardite: Am. Mineralogist, vol. 10, no. 11, pp. 421-428, 3 figs., November, 1925.
2. The identity of "lehnerite" and ludlamite: Am. Mineralogist, vol. 10, no. 11, pp. 428-429, November, 1925.
3. The optical properties of zincite from Franklin, New Jersey: Am. Mineralogist, vol. 12, no. 4, pp. 168-172, 1 fig., 1 pl., April, 1927.

Bernewitz, Max Wilhelm von. See also Osborn, H. S., 1.

1. Handbook for prospectors. ix, 319 pp., 83 figs., New York, McGraw-Hill Book Co., 1926.

Bernt, D. M., jr. See Hertel, 2.

Berry, E. Willard.

1. Upper Cretaceous Ostracoda from Maryland: Am. Jour. Sci., 5th ser., vol. 9, pp. 481-487, 1 pl., June, 1925.
2. Protoconchs of *Caecum* in the Miocene of Maryland: Nautilus, vol. 39, no. 2, pp. 66-67, 1 fig., October, 1925.

Berry, Edward Wilber. See also Hobbs, 16; Loughlin, 9.

1. The history of the linden and ash: Plant World, vol. 21, no. 7, pp. 163-175, 9 figs., July, 1918.
2. Geologic history of the locust and its allies: Plant World, vol. 21, no. 11, pp. 284-298, 2 figs., November, 1918.
3. Paleogeographic significance of the Cenozoic floras of equatorial America and the adjacent regions: Geol. Soc. America, Bull., vol. 29, no. 4, pp. 631-636, December 30, 1918.

Berry, Edward Wilber—Continued.

4. Upper Cretaceous floras of the eastern Gulf region in Tennessee, Mississippi, Alabama, and Georgia: U. S. Geol. Survey, Prof. Paper 112, 177 pp. 33 pls. (incl. map), 12 figs., 1919. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 9, no. 20, pp. 631–632. December 4, 1919.
5. A Cretaceous *Hymenaea* from Alabama: Am. Jour. Sci., 4th ser., vol. 47, pp. 65–68, 1 fig., January, 1919.
6. Pleistocene plants from Tennessee and Mississippi: Torrey, vol. 19, no. 1, pp. 8–10, January, 1919.
7. *Eucalyptus* never present in North America: Science, new ser., vol. 49, pp. 91–92, January 24, 1919.
8. The age of the Brandon lignite and flora: Am. Jour. Sci., 4th ser., vol. 47, pp. 211–216, March, 1919.
9. Present tendencies in paleontology: Am. Jour. Sci., 4th ser., vol. 48, pp. 1–12, July, 1919. Abstract, Washington Acad. Sci., Jour., vol. 9, no. 13, pp. 382–383, July 19, 1919.
10. The Upper Cretaceous Mississippi gulf: Scientific Monthly, vol. 9, no. 2, pp. 131–144, 6 figs., August, 1919.
11. A new *Matonidium* from Colorado, with remarks on the distribution of the Matoniaceae: Torrey Bot. Club, Bull., vol. 46, no. 8, pp. 285–294, 2 figs., 2 pls., August, 1919.
12. An Eocene flora from trans-Pecos Texas: U. S. Geol. Survey, Prof. Paper 125, pp. 1–9, 3 pls., 2 figs., September 12, 1919; abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 10, no. 11, p. 328, June 4, 1920.
13. The geological history of the sweet gum and witch hazel: Plant World, vol. 22, no. 12, pp. 345–354, 9 figs., December, 1919.
14. Paleobotany; a sketch of the origin and evolution of floras: Smithsonian Inst., Ann. Rept., 1918, pp. 289–407, 36 figs., 6 pls., 1920.
15. The evolution of flowering plants and warm-blooded animals: Am. Jour. Sci., 4th ser., vol. 49, pp. 207–211, March, 1920.
16. The ancestors of the sequoias: Natural History, vol. 20, no. 2, pp. 153–155, 3 figs., March–April, 1920.
17. Fossil plants from the late Cretaceous of Tennessee: Nat. Acad. Sci., Proc., vol. 6, no. 6, pp. 333–334, June 15, 1920.
18. The late Lower Cretaceous at Federal Hill, Maryland: Am. Jour. Sci., 4th ser., vol. 50, pp. 48–52, 5 figs., July, 1920.
19. The teaching of paleobotany: Geol. Soc., America, Bull., vol. 31, no. 3, pp. 389–392, September 30, 1920.
20. Contributions to the Mesozoic flora of the Atlantic Coastal Plain, XIII; North Carolina: Torrey Bot. Club, Bull., vol. 47, no. 9, pp. 397–406, 2 figs. September, 1920.
21. New specific name [*Inga culebrana* proposed for *Inga oligocaenica* Berry non Engelhardt]: Torrey, vol. 20, no. 5, p. 101, September–October, 1920.
22. Concerning diastrophism: Science, new ser., vol. 52, pp. 315–318, October 1, 1920.
23. The age of the Dakota flora: Am. Jour. Sci., 4th ser., vol. 50, pp. 387–390, November, 1920.
24. Paleontology and pragmatism: Science, new ser., vol. 52, pp. 529–531, December 3, 1920.
25. A palm nut from the Miocene of the Canal Zone: U. S. Nat. Mus., Proc., vol. 59, pp. 21–22, 3 figs., 1921.

Berry, Edward Wilber—Continued.

26. Tertiary fossil plants from the Dominican Republic: U. S. Nat. Mus., Proc., vol. 59, pp. 117-127, 1 pl., 1921.
27. Tertiary fossil plants from Costa Rica: U. S. Nat. Mus., Proc., vol. 59, pp. 169-185, 6 pls., 1921.
28. Contributions to the Mesozoic flora of the Atlantic Coastal Plain, XIV; Tennessee: Torrey Bot. Club, Bull., vol. 48, no. 2, pp. 55-72, February, 1921.
29. Paleontology; its contributions to knowledge: Scientia, 2d ser., vol. 29, no. 108-4, pp. 263-274, April, 1921.
30. A *Potamogeton* from the Upper Cretaceous [of Henry County, Tennessee]: Am. Jour. Sc., 5th ser., vol. 1, pp. 420-423, 3 figs., May, 1921.
31. A *Pseudocycas* from British Columbia: Am. Jour. Sci., 5th ser., vol. 2, pp. 183-186, 1 fig., September, 1921.
32. Tertiary fossil plants from the Republic of Haiti: U. S. Nat. Mus., Proc., vol. 62, art. 14, 10 pp., 2 figs., 1 pl., 1922.
33. (and Johnston, W. A.). Pleistocene interglacial deposits in the Vancouver region, British Columbia: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 16, sec. 4, pp. 133-140, 2 pls., 1922.
34. Additional occurrences of Pleistocene plants [Alabama and Tennessee]: Torreya, vol. 22, no. 1, pp. 10-11, January-February, 1922.
35. Northernmost extension of marine Eocene beds in Mississippi embayment: Pan-Am. Geologist, vol. 37, no. 1, pp. 75-76, February, 1922.
36. The flora of the Woodbine sand at Arthurs Bluff, Texas: U. S. Geol. Survey, Prof. Paper 129, pp. 153-181, 1 fig., 5 pls., March 23, 1922.
37. The flora of the Cheyenne sandstone of Kansas: U. S. Geol. Survey, Prof. Paper 129, pp. 199-225, 16 pls., April 11, 1922.
38. A new genus of fossil fruit [*Calatoloides*, Eocene, Texas]: Am. Jour. Sci., 5th ser., vol. 3, pp. 251-253, 2 figs., April, 1922.
39. An American *Spirulirostra* [Isthmus of Tehuantepec, Mexico]: Am. Jour. Sci., 5th ser., vol. 3, pp. 327-334, 5 figs., May, 1922.
40. A possible explanation of upper Eocene climates: Am. Philos. Soc., Proc., vol. 61, no. 1, pp. 1-14, 1 fig., 1922. Abstract, Science, new ser., vol. 55, p. 654, June 16, 1922.
41. Additions to the flora of the Wilcox group: U. S. Geol. Survey, Prof. Paper 131, pp. 1-21, 18 pls., July 27, 1922.
42. The geologic evidence of evolution: Sci. Monthly, vol. 15, no. 2, pp. 97-118, 5 figs., August, 1922.
43. *Saccoglottis*, recent and fossil: Am. Jour. Sci., 5th ser., vol. 4, pp. 127-130, 1 fig., August, 1922.
44. Environmental interpretation of fossil plants: Pan-Am. Geologist, vol. 38, no. 1, pp. 9-17, August, 1922.
45. *Sagenopteris*, a Mesozoic representative of the Hydropteraceae: Bot. Gazette, vol. 74, no. 3, pp. 329-331, 1 fig., November, 1922.
46. Tree ancestors; a glimpse into the past. 270 pp., 48 figs., 1 pl., Baltimore, Williams & Wilkins Company, 1923.
47. Pathological conditions among fossil plants. In Moodie, Roy L., Paleopathology, pp. 99-108, Urbana, 1923.
48. Miocene plants from southern Mexico: U. S. Nat. Mus., Proc., vol. 62, art. 19, 27 pp., 1 fig., 7 pls., 1923.
49. The Pennsylvanian of north-central Texas: Science, new ser., vol. 57, pp. 690-692, June 15, 1923.

Berry, Edward Wilber—Continued.

50. The age of the supposed Lower Cretaceous of Alabama: Washington Acad. Sci., Jour., vol. 13, no. 20, pp. 433-443, 6 figs., December 4, 1923.
51. The middle and upper Eocene floras of southeastern North America: U. S. Geol. Survey, Prof. Paper 92, 206 pp., 9 figs., 65 pls., 1924.
52. The fossil swamp deposit at the Walker Hotel site, Connecticut Avenue and De Sales Street, Washington, D. C.; organic remains other than diatoms from the excavation: Washington Acad. Sci., Jour., vol. 14, no. 1, pp. 12-25, 3 pls., January 4, 1924.
53. A cucurbitaceous fruit from the Tertiary of Texas: Torreya, vol. 24, no. 1, pp. 5-7, 2 figs., January-February, 1924.
54. A fossil flower from the Miocene of Trinidad: Am. Jour. Sci., 5th ser., vol. 7, pp. 103-108, 2 figs., February, 1924.
55. Paleobotany at the New York State Museum: Science, new ser., vol. 69, pp. 336-337, April 11, 1924.
56. An early Eocene florule from central Texas: U. S. Geol. Survey, Prof. Paper 132, pp. 87-92, 1 fig., 1 pl., April 10, 1924.
57. *Ophioglossum hastatiforme* Ckl. not an *Ophioglossum*: Torreya, vol. 24, no. 3, pp. 49-50, May-June, 1924.
58. The Mississippi Gulf in the middle and upper Eocene: Sci. Monthly, vol. 19, no. 1, pp. 30-42, 7 figs., July, 1924.
59. Fossil plants and Unios in the red beds of Wyoming: Jour. Geology, vol. 32, no. 6, pp. 488-497, 7 figs., August-September, 1924.
60. Age and area as viewed by the paleontologist: Am. Jour. Botany, vol. 11, no. 9, pp. 547-557, 16 figs., November, 1924.
61. A *Sparganium* from the middle Eocene of Wyoming: Bot. Gazette, vol. 78, no. 3, pp. 342-348, 7 figs., November, 1924.
62. American Tertiary terrestrial plants and their interdigitation with marine deposits: Geol. Soc. America, Bull., vol. 35, no. 4, pp. 767-784, 2 figs., December, 1924.
63. The flora of the Ripley formation: U. S. Geol. Survey, Prof. Paper 136, 94 pp., 6 figs., 23 pls., 1925.
64. The Tertiary flora of the Island of Trinidad, B. W. I.: Johns Hopkins Univ., Studies in geology, no. 6, pp. 71-160, 16 pls., 1925.
65. On correlation: Geol. Soc. America, Bull., vol. 36, no. 1, pp. 263-277, March 30, 1925.
66. Ancestry of certain monotypic, ditypic, and small genera of plants (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 224, March 30, 1925.
67. A Pleistocene flora from the Island of Trinidad: U. S. Nat. Mus., Proc., vol. 66, art. 21, 9 pp., 4 pls., May 23, 1925.
68. The environment of the early vertebrates: Am. Naturalist, vol. 59, pp. 354-362, July-August, 1925.
69. Miocene Araceae related to *Caladium* from Trinidad: Pan-Am. Geologist, vol. 44, no. 1, pp. 38-42, 1 pl., August, 1925.
70. The age and affinities of the Tertiary flora of western Canada: Nat. Acad. Sci., Proc., vol. 11, no. 11, pp. 671-673, November 15, 1925.
71. A new *Salvinia* from the Eocene [Wyoming and Tennessee]: Torreya, vol. 25, no. 6, pp. 116-118, 1 fig., November-December, 1925.
72. Flora and ecology of so-called Bridger beds of Wind River Basin, Wyoming: Pan-Am. Geologist, vol. 44, no. 5, pp. 357-368, December, 1925.

Berry, Edward Wilber—Continued.

73. On fossil plants from the Paskapoo formation of Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, pt. 2, sec. 4, pp. 189-209, 1 fig., 1926.
74. The age of certain Mesozoic geological formations in western Canada: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, pt. 2, sec. 4, pp. 201-206, 1926.
75. Pleistocene plants from North Carolina: U. S. Geol. Survey, Prof. Paper 140, pp. 97-119, 13 pls., February 17, 1926.
76. Terminalia in the lower Eocene of southeastern North America: Torrey Bot. Club, Bull., vol. 53, no. 2, pp. 59-65, 6 figs., February, 1926.
77. Antaeus, or the future of geology: Science, new ser., vol. 63, pp. 475-476, May 7, 1926.
78. Tertiary floras from British Columbia: Canada, Geol. Survey, Bull. no. 42, pp. 91-116, 11 pls., May 8, 1926.
79. Pre-Columbian petrified wood industry: Pan-Am. Geologist, vol. 45, no. 4, pp. 273-276, 1 pl., May, 1926.
80. The fossil seeds from the *Titanotherium* beds of Nebraska, their identity and significance: Am. Mus. Novitates, no. 221, 8 pp., 7 figs., June 21, 1926.
81. The term Psychozoic: Science, new ser., vol. 64, pp. 16-17, July 2, 1926.
82. Fossil leaves from Beaver County, Oklahoma: Oklahoma Geol. Survey, Bull. no. 38, pp. 34-35, 2 pls., August, 1926.
83. The romance of collecting fossil plants: Nat. History (Am. Mus. Nat. Hist., Jour.), vol. 26, no. 5, pp. 475-485, 6 figs., September-October, 1926.
84. A new type of caddis case from the lower Eocene of Tennessee: U. S. Nat. Mus., Proc., vol. 71, art. 14, 4 pp., 1 pl., 1927.
85. Frank Hall Knowlton: Science, new ser., vol. 65, pp. 7-8, January 7, 1927.
86. The term Oligocene and certain climatic considerations: Am. Jour. Sci., 5th ser., vol. 13, pp. 252-256, March, 1927.
87. Frank Hall Knowlton, 1860-1926: Am. Jour. Sci., 5th ser., vol. 13, pp. 281-282, March, 1927.
88. New plant records from the Pleistocene: Torrey, vol. 27, no. 2, pp. 21-27, 1 pl., March-April, 1927.
89. Eocene botany of our Gulf States: Pan-Am. Geologist, vol. 47, no. 4, pp. 269-278, 1 fig., May, 1927.
90. Cycads in the Shinarump conglomerate of southern Utah: Washington Acad. Sci., Jour., vol. 17, no. 11, pp. 303-307, 5 figs., June 4, 1927.
91. Devonian floras: Am. Jour. Sci., 5th ser., vol. 14, pp. 109-120, 9 figs., August, 1927.
92. The flora of the Esmeralda formation in western Nevada: U. S. Nat. Mus., vol. 72, art. 23, 15 pp., 2 pls., 1927.
93. Links with Asia before the mountains brought aridity to the western United States: Sci. Monthly, vol. 25, no. 4, pp. 321-328, October, 1927.
94. Comments on the Wegener hypothesis. In Theory of continental drift, pp. 194-196, Am. Assoc. Petroleum Geologists, 1928.
95. *Weichselia* from the Lower Cretaceous of Texas: Washington Acad. Sci., Jour., vol. 18, no. 1, pp. 1-5, 1 fig., January 4, 1928.
96. Stones of *Celtis* in the Tertiary of the western United States: Am. Mus. Novitates, no. 298, 5 pp., 6 figs., February 3, 1928.

Berry, Edward Wilber—Continued.

97. A caddis case of leaf pieces from the Miocene of Washington: Washington Acad. Sci., Jour., vol. 18, no. 3, pp. 60–61, 1 fig., February 4, 1928.
98. A petrified walnut from the Miocene of Nevada: Washington Acad. Sci., Jour., vol. 18, no. 6, pp. 158–160, 1 fig., March 19, 1928.
99. Cephalopod adaptations; the record and its interpretation: Quart. Rev. Biology, vol. 3, no. 1, pp. 92–108, 6 pls., March, 1928.
100. Concerning terrestrial floras in the pre-Cambrian: Am. Jour. Sci., 5th ser., vol. 15, p. 431, May, 1928.
101. Fossil nutlets of the genus *Lithospermum*: U. S. Nat. Mus., Proc., vol. 73, art. 13, 3 pp., 1 pl., 1928.
102. A Miocene Paliurus from the State of Washington: Am. Jour. Sci., 5th ser., vol. 16, pp. 39–44, 4 figs., July, 1928.
103. A palm fruit from the Miocene of western Panama: Washington Acad. Sci., Jour., vol. 18, no. 16, pp. 455–457, 1 fig., October 4, 1928.
104. Contributions to the Mesozoic flora of the Atlantic Coastal Plain, XV [Carroll County, Tennessee]: Torrey Bot. Club, Bull., vol. 55, no. 8, pp. 441–448, 2 pls., November, 1928.
105. The story told by fossil plants. In Creation by evolution, edited by Frances Mason, pp. 156–173, 9 figs., New York, The Macmillan Company, 1928.

Berry, Samuel Stillman.

1. Fossil chitons of western North America: California Acad. Sci., Proc., 4th ser., vol. 11, no. 18, pp. 399–526, 11 figs., 16 pls., May 16, 1922.
2. Fossil chitons from the Pleistocene of San Quintin Bay, Lower California: Am. Jour. Sci., 5th ser., vol. 12, pp. 455–456, November, 1926.

Berryman, B. A.

1. Outline of mining and smelting conditions at San Pedro, New Mexico: Utah Acad. Sci., Trans., vol. 1, pp. 122–127, February, 1918.

Best, J. Boyd.

1. Some probable relations of structure to production [of petroleum] in Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 1, pp. 75–76, January–February, 1923.

Bevan, Arthur. See also Clapp, C. H., 2.

1. Some geologic features of the Beartooth Mountains, Montana (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 29, March 31, 1921.
2. Summary of the geology of the Beartooth Mountains, Montana: Jour. Geology, vol. 31, no. 6, pp. 441–465, 12 figs. (incl. maps), September–October, 1923.
3. Outline of the geology of the Oregon quadrangle [Illinois]: Illinois State Acad. Sci., Trans., vol. 17, pp. 187–193, 1925.
4. Transition beds between the St. Peter sandstone and the Platteville limestone: Illinois State Acad. Sci., Trans., vol. 18, pp. 376–377, 1925.
5. Rocky Mountain peneplains northeast of Yellowstone Park: Jour. Geology, vol. 33, no. 6, pp. 563–587, 9 figs., August–September, 1925.
6. The Glenwood beds as a horizon marker at the base of the Platteville formation: Illinois State Geol. Survey, Rept. Investigations no. 9, 13 pp., 3 figs., 1926.
7. Glaciation of the Beartooth Mountains, Montana (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 142–143, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, pp. 150–151, March, 1927.

Bevan, Arthur—Continued.

8. Rocky Mountain front in Montana (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 160-161, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, pp. 71-72, February, 1928.
9. Cenozoic history of the Montana front ranges (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, p. 177, 1928; *Ohio Jour. Sci.*, vol. 28, no. 3, p. 155, May, 1928.

Bevier, George M.

1. The Damon Mound oil field, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 505-535, 6 figs., 1 pl., May-June, 1925; *Geology of salt dome oil fields*, pp. 613-643, 6 figs., 1 pl., 1926.
2. The Barbers Hill oil field, Chambers County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 6, pp. 958-973, 5 figs., September, 1925; *Geology of salt dome oil fields*, pp. 530-545, 5 figs., 1926.

Bibbins, Arthur Barneveld.

1. A small meteor crater in Texas: *Eng. and Min. Jour.-Press*, vol. 121, no. 23, p. 932, 1 fig., June 5, 1926.

Bichowsky, F. Russell.

1. An unusual sulphur crystal: *Washington Acad. Sci., Jour.*, vol. 9, no. 5, pp. 126-131, 2 figs., March 4, 1919.

Biernbaum, Morrell G.

1. Famous mineral localities of the world; the zeolite localities of Nova Scotia: *Rocks and Minerals*, vol. 2, no. 4, pp. 126-127, December, 1927.
2. Where and how to find minerals: *Rocks and Minerals*, vol. 3, no. 4, pp. 101-104, December, 1928.

Billings, Marland P.

1. On the mechanics of dike intrusion: *Jour. Geology*, vol. 33, no. 2, pp. 140-150, 2 figs. (incl. map), February-March, 1925.
2. Topaz and phenacite from Baldface Mountain, Chatham, New Hampshire: *Am. Mineralogist*, vol. 12, no. 4, pp. 173-179, 5 figs., April, 1927.
3. Roof collapse in the late Paleozoic alkaline batholiths (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 187-188, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 143, March, 1928.
4. Relative abundance of glacial striations, crescentric fractures, and lunoid furrows (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 224, March 30, 1928.
5. The petrology of the North Conway quadrangle in the White Mountains of New Hampshire: *Am. Acad. Arts and Sci., Proc.*, vol. 63, no. 3, pp. 67-137, 11 figs., 2 pls. (incl. map), May, 1928.
6. The chemistry, optics, and genesis of the hastingsite group of amphiboles: *Am. Mineralogist*, vol. 13, no. 7, pp. 287-296, July, 1928.

Billingsley, Paul. See also Kemp, 8.

1. Some features of the application of geology to mining as practiced by the geological department, Anaconda Copper Mining Company [Butte, Montana]: *Canadian Min. Inst., Monthly Bull.*, no. 97, pp. 431-435, May, 1920; *Trans.*, vol. 23, pp. 362-367 [1921]; *Min. and Sci. Press*, vol. 120, pp. 907-908, June 19, 1920.

Bingay, T. W.

1. (and Alcock, F. J.). Lead and zinc in Canada: Canadian Min. and Met. Bull., no. 184, pp. 920-943, 13 figs., August, 1927; Canadian Inst. Min. and Met., Trans., vol. 30, pp. 225-251, 13 figs. [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc., pt. 1, pp. 633-659, 13 figs., 1928.

Binney, Edwin, jr., 1899-1928.

1. Petroleum-bearing concretions: Econ. Geology, vol. 18, no. 6, pp. 600-603, September, 1923.
2. Natural gas from beds of continental accumulation; Golden Eagle gas field, Wyoming: Econ. Geology, vol. 21, no. 7, pp. 665-694, 3 figs., November, 1926.

Birch, Stephen.

1. Geology and mining methods of Kennecott mines [Chitina district, Alaska]: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1287, 12 pp., 2 figs., January, 1924; vol. 72, pp. 499-511, 2 figs., 1925; abstract, Mining and Metallurgy, vol. 5, pp. 29-30, January, 1924.
2. Geology and mining methods of Beatson mine [Prince William Sound district, Alaska]: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1288, 7 pp., 4 figs., January, 1924; abstract, Mining and Metallurgy, vol. 5, no. 205, pp. 30-31, January, 1924.

Birdseye, Claude H.

1. (and Moore, Raymond C.). A boat voyage through the Grand Canyon of the Colorado: Geog. Rev., vol. 14, no. 2, pp. 177-196, 18 figs., April, 1924.

Birk, Ralph A.

1. The Sayre [oil] field, Beckham County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 3, pp. 347-349, 1 fig., May-June, 1924.
2. The extension of a portion of the Pontotoc series around the western end of the Arbuckle Mountains: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 6, pp. 983-989, 1 fig. (map), September, 1925.

Birse, D. J.

1. Dolomitization processes in the Paleozoic horizons of Manitoba: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 22, sec. 4, pp. 215-221, 7 pls., May, 1928; abstract, vol. 21, p. xciv, 1927.

Bishop, Sherman Chauncey. See also Hartnagel, 1, 4.

1. The Temple Hill (Orange County, New York) *Mastodon*: Science, new ser., vol. 54, p. 170, August 26, 1921.
2. (and Clarke, Noah T.). A scientific survey of Turners Lake, Isle-au-Haut, Maine . . . 1922; with special examinations and notes by John M. Clarke and others. 29 pp., 22 pls., New York State Museum, Albany, N. Y., August, 1923, published privately. Also issued with New York State Museum Bulletin no. 251, 1924.

Bissell, J. L. See Kentucky Geol. Survey, 13, 17.

Bissell, Malcolm Havens.

1. On the use of the terms "denudation," "erosion," "corrosion," and "corrasion"; Science, new ser., vol. 53, pp. 412-414, April 29, 1921.
2. Postglacial history of the Connecticut River near Middletown, Connecticut (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 75-76, March 30, 1924.

Bissell, Malcolm Havens—Continued.

3. Preglacial course of the Connecticut River near Middletown, Connecticut, and its significance: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 233-240, 2 figs., March, 1925.
4. Possible cause of the semiarid climate of eastern North America in Triassic time (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 139-140, March 30, 1925.

Black, George F.

1. Amber and its origin: *Am. Mineralogist*, vol. 4, nos. 7-10, pp. 83-85, 97-99, 118-120, 130-131, July-October, 1919.
2. The Belleville copper mine [North Arlington, New Jersey]: *Am. Mineralogist*, vol. 7, no. 9, pp. 154-158, September, 1922.

Black, R. F.

1. (and Powell, W. Carlos). Preliminary report on the underground water in Socorro and Torrance counties: New Mexico, State Eng., 8th Bienn. Rept., pp. 109-126, 2 pls. [1928].

Blackburn, Chester O. See Van Tuyl, 9, 13.

Blackwelder, Eliot. See also Twenhofel, 16, 18, 22, 29.

1. The climatic history of Alaska from a new viewpoint: *Illinois Acad. Sci., Trans.*, vol. 10, pp. 275-280 [1918].
2. The U. S. Geological Survey: *Science*, new ser., vol. 51, pp. 346-348, April 2, 1920.
3. The origin of the central Kansas oil domes: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 4, no. 1, pp. 89-94, 1920.
4. The trend of earth history: *Science*, new ser., vol. 55, pp. 83-90, 114-119, January 27 and February 3, 1922.
5. Moving underground water in the accumulation of oil and gas: *Econ. Geology*, vol. 17, no. 3, p. 217, May, 1922.
6. Supposed glacial formations in the pre-Cambrian terranes of the Rocky Mountains (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 70-71, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 139, March, 1924.
7. Suggestions for the improvement of our geologic terminology (abstract): *Geol. Soc., America, Bull.*, vol. 35, no. 1, p. 103, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 151, March, 1924.
8. Wasatch Mountains revisited (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 132-133, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 1, pp. 74-75, February, 1925.
9. (and Baddley, Elmer R.). Relations between batholiths and schistosity (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 208-209, March 30, 1925.
10. Exfoliation as a phase of rock weathering: *Jour. Geology*, vol. 33, no. 8, pp. 793-806, 6 figs., November-December, 1925.
11. Phosphate deposits of the Pacific (discussion): *Econ. Geology*, vol. 20, no. 7, pp. 698-699, November, 1925.
12. Photography for the field geologist: *Washington Acad. Sci., Jour.*, vol. 16, no. 4, pp. 93-97, February 19, 1926.
13. Earthquakes in Jackson Hole, Wyoming: *Seismologic Soc. America, Bull.*, vol. 16, no. 3, p. 196, September, 1926.
14. Pre-Cambrian geology of the Medicine Bow Mountains: *Geol. Soc. America, Bull.*, vol. 37, no. 4, pp. 615-658, 11 figs. (incl. maps), December 30, 1926.

Blackwelder, Eliot—Continued.

15. Fire as an agent in rock weathering: *Jour. Geology*, vol. 35, no. 2, pp. 134-140, 3 figs., February-March, 1927; abstract, *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 142-143, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 1, p. 91, February, 1926.
16. Desert weathering (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 127-128, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 74, February, 1927.
17. Scarp at the mouth of Kern River Canyon [California] (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 207, March 30, 1927.
18. Mudflow as a geologic agent in semiarid mountains (with discussion by Joseph T. Singewald, jr.): *Geol. Soc. America, Bull.*, vol. 39, no. 2, pp. 465-483, 7 figs., June, 1928; abstract, *Pan-Am. Geologist*, vol. 49, no. 2, pp. 156-157, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 206, March 30, 1928.
19. Origin of the desert basins of southwest United States (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 262-263, March 30, 1928.
20. Evidence of a third glacial epoch in the Sierra Nevada (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 268, March 30, 1928.
21. The recognition of fault scarps: *Jour. Geology*, vol. 36, no. 4, pp. 289-311, 8 figs., May-June, 1928.
22. Wind abrasion in arid Southwest (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 303, May, 1928.
23. Origin of Piedmont plains of Great Basin (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 307, May, 1928.
24. Moraines of Convict Lake glaciers [California] (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 309, May, 1928.
25. Cavernous weatherings in arid regions (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 311, May, 1928.
26. Notes on sedimentary deposits in the desert: *Nat. Research Council, Reprint and Circ. Ser.*, no. 85, pp. 78-80, 1928.

Blair, S. M. See Clark, K. A., 4, 5.

Blanchard, Roland.

1. The Jervis Inlet region, British Columbia: *Pacific Min. News*, vol. 1, no. 3, pp. 67-69, 3 figs., July, 1922.
2. Notes on the oxidation products derived from chalcopyrite: *Econ. Geology*, vol. 20, no. 7, pp. 613-638, 2 figs., 2 pls., November, 1925.
3. (and Boswell, P. F.). Status of leached outcrops investigation: *Eng. and Min. Jour.*, vol. 125, no. 7, pp. 280-285, no. 9, pp. 373-377, 13 figs., February 18 and March 3, 1928.

Blanchard, W. O.

1. The geography of southwestern Wisconsin: *Wisconsin Geol. and Nat. Hist. Survey, Bull.* no. 65, 117 pp., 81 figs., 1924.

Blanchard, W. Grant, jr. See also Keyte, 2.

Blatchley, Raymond S.

1. Notes on the southwest Texas region: *Oil Bull.*, vol. 13, no. 6, pp. 593, 595, June, 1927.

Blázquez, Luis.

1. Informe preliminar de la hidrología subterránea de las cuencas de los ríos de la Concepción y de Sonoyta, Distrito de Altar, Estado de Sonora: *Mexico, Inst. geol., Foll. divulgación*, no. 22, 30 pp., December, 1926.

Blázquez, Luis—Continued.

2. Informe preliminar acerca de la hidrología subterránea de la región que comprende como pueblos principales Guadalupe, San José de la Isla, Ojocaliente, Villa García, Pinos y Villa de Arriaga, de los Estados Zacatecas y San Luis Potosí: Mexico, Inst. geol., Foll. divulgación, no. 30, 17 pp., 1928.

Bliss, Eleanora F. See Knopf, Eleanora Bliss.

Bloesch, Edward.

1. Unconformities in Oklahoma and their importance in petroleum geology: Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 253-285, 1919.
2. Remarks on subsurface contouring: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, pp. 317-322, 1 fig., July-August, 1922.
3. Fort Scott-Wetumka correlation: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 8, pp. 810-811, August, 1926.
4. Oil and gas in Oklahoma: Nowata and Craig counties: Oklahoma Geol. Survey, Bull. no. 40-EE, 30 pp., 2 figs., 1 pl., June, 1928.

Boalich, Edwin Snow.

1. (and others). The clay industry in California: California State Min. Bur., Prel. Rept. no. 7, 108 pp., 24 figs., January, 1920.
2. Notes on iron occurrences in California: California State Min. Bur., Mining in California, vol. 18, no. 3, pp. 110-113, March, 1922.
3. Bibliography of coal in California: California State Min. Bur., Mining in California, vol. 18, no. 4, pp. 152-157, April, 1922.

Bock, Peter.

1. Bericht über den Ausbruch des Vulkans Izalco, El Salvador, im November 1926: Zeitschr. Vulkanologie, Bd. 11, H. 3, pp. 190-191, July, 1928.

Böggild, Ove Balthasar.

1. Grönland. In Steinmann, G., and Wilckens, O., Handbuch der regionalen Geologie, H. 21, Bd. IV, 2a, 38 pp., 6 figs. (incl. maps), Heidelberg, 1917.
2. Dahllit von Kangerdluarsuk [Grönland]: Zeitschr. Krystallographie, Bd. 55, H. 5-6, pp. 417-425, 5 figs., 1920.
3. Leifit, ein neues Mineral von Narsarsuk, Grönland: Zeitschr. Krystallographie, Bd. 55, H. 5-6, pp. 425-429, 1920.
4. Grönland, almindelig Oversigt; Geologi [a general account of the geology of Greenland]: Meddelelser om Grönland, Bd. 60, pp. 29-36, atlas, pl. 2 (geol. map), 1921.
5. The meteoric iron from Savik near Cape York, north Greenland: Meddelelser om Groenland, Bd. 74, pp. 9-30, 6 pls., 1927; Copenhagen, Univ., Mineralogical and Geological Museum, Contributions to Mineralogy, no. 22, 30 pp., 5 figs., 6 pls., 1927.
6. The geology of Greenland. In Greenland, published by the Commission for the direction of the geological and geographical investigations in Greenland, pp. 231-255, 6 figs. (maps), London, Humphrey Milford, Oxford University Press, 1928.

Boericke, W. F.

1. (and Garnett, T. H.). The Wisconsin zinc district: Am. Inst. Min. and Met. Eng., Bull. no. 152, pp. 1213-1235, 5 figs., August, 1919; Trans. vol. 63, pp. 213-243, 5 figs., 1920. Discussion by G. H. Cox and others, Mining and Metallurgy, no. 157, pp. 68-71, January, 1920.

Böse, Emil, 1868-1927. See also Udden, 5.

1. The Permo-Carboniferous ammonoids of the Glass Mountains, west Texas, and their stratigraphical significance: Texas, Univ., Bull. no. 1762, 241 pp., 11 pls., November 5, 1917.
2. On a new *Exogyra* from the Del Rio clay and some observations on the evolution of *Exogyra* in the Texas Cretaceous: Texas, Univ., Bull. no. 1902, 22 pp., 5 pls., 1 fig., January 5, 1919.
3. On a new ammonite fauna of the Lower Turonian of Mexico: Texas Univ., Bull. no. 1856, pp. 173-252, 7 figs., 9 pls., October 5, 1918 [1920].
4. On the ammonoids from the Abo sandstone of New Mexico and the age of the beds which contain them: Am. Jour. Sci., 4th ser., vol. 49, pp. 51-60, January, 1920.
5. On the Permian of Coahuila, northern Mexico: Am. Jour. Sci., 5th ser., vol. 1, no. 2, pp. 187-194, February, 1921.
6. Algunas faunas cretácicas de Zacatecas, Durango y Guerrero: Mexico, Inst. geol., Bol., no. 42, 219 pp., 19 pls., 1923.
7. Vestiges of an ancient continent in northeast Mexico: Am. Jour. Sci., 5th ser., vol. 6, pp. 127-136, 196-214, 310-337, 4 figs., August-October, 1923.
8. (and Cavins, O. A.). The Cretaceous and Tertiary of southern Texas and northern Mexico: Texas, Univ., Bull. no. 2748, pp. 7-142, 1 pl. (paleogeographic map), December, 1927.
9. Cretaceous ammonites from Texas and northern Mexico: Texas, Univ., Bull. no. 2748, pp. 143-312, 18 pls., December 22, 1927.

Boezinger, H.

1. The minor oil fields of Kern County; Belridge and North Belridge oil fields: California State Min. Bur., Summary of Operations California Oil Fields, vol. 10, no. 1, pp. 11-18, 1 pl. (map), July, 1924.

Bole, G. A. See Stull, 2.

Bollinger, C. J.

1. A preliminary interpretation of certain peculiarities of the North and South Canadian River basins in the red beds area of Oklahoma: Oklahoma Acad. Sci., Proc., vol. 3 (Oklahoma, Univ., Bull., new ser. no. 271), pp. 117-120, October 1, 1923.

Bonazzi, Augusto.

1. Reconocimiento agro-geológico de los terrenos de las fincas Chaparra y Delicias [Cuba]: Bol. minas, Habana, no. 12, pp. 30-49, 8 figs., 1 pl., 1928.

Bond, Lewis A.

1. The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1919, to March 31, 1920: California, Univ., Seismographic Stations. Bull. no. 19, pp. 387-404, September 29, 1920.
2. The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1920, to September 30, 1920: California, Univ., Seismographic Stations, Bull., no. 20, pp. 405-422, April 29, 1921.
3. The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1920, to March 31, 1921: California, Univ., Pub., Seismographic Stations, Bull., vol. 2, no. 1, 15 pp., November 18, 1921.

Bonillas, Ignacio S.

1. Clasificación [de rocas del Estado de Guerrero]: Bol. minero, t. 6, no. 4, pp. 498-504, October, 1918.
2. Descripción petrográfica de las rocas eruptivas y de contacto de las Sierras de Minillas, Cerro Prieto, Pichagua y Sierra de Ramírez: Mexico, Inst. geol., Bol. no. 42, pp. 47-58, 1923.

Bonine, Chesleigh Arthur. See also Twenhofel, 16, 22.

1. Underground water in migration and accumulation of oil and gas: Econ. Geology, vol. 17, no. 5, pp. 389-392, August, 1922.
2. Recent work on bentonite: Nat. Research Council, Reprint and Circ. Ser., no. 85, pp. 12-17, 1928.

Bonnell, Clarence.

1. The variety of physiographic material in a few counties of southern Illinois: Illinois Acad. Sci., Trans., vol. 9, pp. 203-208, 3 pls. [1917].
2. The effects of faults and dikes in the Saline County coal field (abstract): Illinois State Acad. Sci., Trans., vol. 14, pp. 219-220 [1922].
3. Description of a boulder near the southern limit of glaciation in Illinois: Illinois State Acad. Sci., Trans., vol. 15, pp. 405-407 [1923].

Boone County Historical Society, Columbia, Missouri.

1. Dedication of Swallow memorial monument, June 5, 1928, 4 p. m., Columbia Cemetery, and facts concerning the life of George Clinton Swallow, M. D., LL. D. 50 pp., portr. [Columbia(?), 1928(?)].

Includes papers, biographical in character, by G. C. Broadhead, Charles Keyes, James S. Williams, H. A. Buehler, and others.

Boot, David H.

1. Meteor Mountain [Arizona]: Iowa Acad. Sci., Proc., vol. 26, pp. 379-383, 6 figs. [1920].

Bostock, Hugh S.

1. Horn silver mine, Similkameen, British Columbia: Canada, Geol. Survey, Summ. Rept., 1927, pt. A, pp. 47-52, map, 1928.

Boswell, P. F. See also Blanchard, 3.

1. Oxidation products derived from sphalerite and galena: Econ. Geology, vol. 32, no. 5, pp. 419-453, 5 figs., August, 1927.

Bosworth, Thomas Owen, 1882-1929. See also Kindle, 9.

1. Geology of the Mid-Continent oil fields, Kansas, Oklahoma, and north Texas. xiv, 314 pp., 24 figs., 8 pls., map, New York, The Macmillan Company, 1920. Review by K. C. Heald, Econ. Geology, vol. 15, no. 7, pp. 612-617, November, 1920.
2. The Mackenzie oil field of northern Canada: Canadian Inst. Min. and Met., Monthly Bull. no. 111, pp. 629-638, July, 1921.
3. The Mackenzie oil field of northern Canada: Inst. Petroleum Technologists, Jour., vol. 7, no. 28, pp. 276-291, 1 fig., 8 pls., October, 1921; Petroleum Times, vol. 5, no. 121, pp. 489-491, April 30, 1921; Canadian Min. Jour., vol. 42, no. 21, pp. 420-422, May 27, 1921. Abstract, Geol. Mag., vol. 58, pp. 287-288, June, 1921.
4. Mackenzie oil field: Mining and Metallurgy, no. 178, pp. 47-48, October, 1921.

Boughton, Charles W. See also Moore, R. C., 6.

1. Elk City gas field, Elk and Montgomery counties, Kansas: Kansas, State Geol. Survey, Bull. 5, 31 pp., 5 pls., 6 figs. [1920].

Boutwell, William D.

1. The mysterious tomb of a giant meteorite: *Nat. Geog. Mag.*, vol. 53, no. 6, pp. 721-730, 10 figs., June, 1928.

Bowen, Charles Franklin. See also Heald, 2.

1. Anticlines in a part of the Musselshell Valley (U. S. Geol. Survey, Bull. 691, pp. 185-209, 1918) (abstract by R. W. Stone): *Washington Acad. Sci., Jour.*, vol. 9, no. 15, p. 442, September 19, 1919.
2. Gradations from continental to marine conditions of deposition in central Montana during the Eagle and Judith River epochs: *U. S. Geol. Survey, Prof. Paper* 125, pp. 11-21, 1 pl. (map), October 20, 1919.
3. (and Roundy, P. V., Ross, C. S., and Reeves, Frank). Structure and oil and gas resources of the Osage Reservation, Oklahoma: Tps. 21-23 N., Rs. 6-7 E., and Tps. 23-25 N., Rs. 3-5 E.: *U. S. Geol. Survey, Bull.* 686, pp. 279-301, 3 pls. (incl. maps), 1919.

Bowen, Norman Levi. See also Fairbanks, 12.

1. Crystallization differentiation in igneous magmas: *Jour. Geology*, vol. 27, no. 6, pp. 393-430, 5 figs., September-October, 1919.
2. Abnormal birefringence of torbenite: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 195-198, 2 figs., September, 1919.
3. Cacoclasite from Wakefield, Quebec: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 440-442, December, 1919.
4. Echellite, a new mineral: *Am. Mineralogist*, vol. 5, no. 1, pp. 1-3, January, 1920.
5. Deformation of crystallizing magma: *Jour. Geology*, vol. 28, no. 3, pp. 265-267, April-May, 1920.
6. Differentiation by deformation: *Nat. Acad. Sci., Proc.*, vol. 6, no. 4, pp. 159-162, April 15, 1920. Abstract, *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 139, March 31, 1920.
7. Crystallization differentiation: *Geol. Mag.*, vol. 57, pp. 238-239, May, 1920.
8. Optical properties of anthophyllite: *Washington Acad. Sci., Jour.*, vol. 10, no. 14, pp. 411-414, 1 fig., August 19, 1920.
9. Diffusion in silicate melts: *Jour. Geology*, vol. 29, no. 4, pp. 295-317, 7 figs., May-June, 1921.
10. Preliminary note on monticellite alnoite from Isle Cadieux, Quebec: *Washington Acad. Sci., Jour.*, vol. 11, no. 12, pp. 278-281, June 19, 1921.
11. Genetic features of alnoitic rocks at Isle Cadieux, Quebec: *Am. Jour. Sci.*, 5th ser., vol. 3, pp. 1-34, 6 figs., 1 pl., January, 1922. Abstract, *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 130, March 31, 1922.
12. The reaction principle in petrogenesis: *Jour. Geology*, vol. 30, no. 3, pp. 177-198, 5 figs., April-May, 1922.
13. The behavior of inclusions in igneous magmas: *Jour. Geology*, vol. 30, supplement to no. 6, pp. 513-570, August-September, 1922.
14. (and Auroousseau, M.). Fusion of sedimentary rocks in drill holes (with discussion by Sidney Powers): *Geol. Soc. America, Bull.*, vol. 34, no. 3, pp. 431-448, 3 figs., September 30, 1923.
15. The genesis of melilite: *Washington Acad. Sci., Jour.*, vol. 13, no. 1, pp. 1-4, January 4, 1923.
16. Mullite, a silicate of alumina: *Washington Acad. Sci., Jour.*, vol. 14, no. 9, pp. 183-191, May 4, 1924.

Bowen, Norman Levi—Continued.

17. The system $\text{Al}_2\text{O}_3\text{--SiO}_2$ (abstract) : Geol. Soc. America, Bull., vol. 35, no. 1, p. 123, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, pp. 158-159, March, 1924.
18. The mineralogical phase rule: Washington Acad. Sci., Jour., vol. 15, no. 13, pp. 280-284, July 19, 1925.
19. The amount of assimilation by the Sudbury norite sheet: Jour. Geology, vol. 33, no. 8, pp. 825-829, 2 figs., November-December, 1925.
20. Concerning "evidence of liquid immiscibility in a silicate magma, Agate Point, Ontario": Jour. Geology, vol. 34, no. 1, pp. 71-73, January-February, 1926.
21. (and Wyckoff, R. W. G.). A petrographic and X-ray study of the thermal dissociation of dumortierite: Washington Acad. Sci., Jour., vol. 16, no. 7, pp. 178-189, 3 figs., April 4, 1926.
22. The origin of ultrabasic and related rocks: Am. Jour. Sci., 5th ser., vol. 14, pp. 89-108, 4 figs., August, 1927.
23. The evolution of the igneous rocks. x, 334 pp., 82 figs., Princeton University Press, 1928.

Bowen, W. C. See Ries, 8.

Bowie, William. See also American Geophysical Union; Shepard, 8; Woodring, 8.

1. Ocean currents and isostasy: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, p. 503, 1921.
2. The bearing of geodetic investigations on the geologic structure of the Pacific: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 3, pp. 882-885, 1921.
3. Some geologic conclusions from geodetic data: Nat. Acad. Sci., Proc., vol. 7, no. 1, pp. 23-28, January, 1921.
4. The relation of isostasy to uplift and subsidence: Am. Jour. Sci., 5th ser., vol. 2, pp. 1-20, July, 1921.
5. The yielding of the earth's crust: Smithsonian Inst., Ann. Rept., 1921, pp. 235-247, 9 figs., 1922.
6. Theory of isostasy—a geological problem: Geol. Soc. America, Bull., vol. 33, no. 2, pp. 273-286, June 30, 1922.
7. The earth's crust and isostasy: Geog. Rev., vol. 12, no. 4, pp. 613-627, 5 figs., October, 1922.
8. The present status of the geodetic work in the United States and its value to geology: Am. Jour. Sci., 5th ser., vol. 5, pp. 378-382, May, 1923; abstract, Geol. Soc. America, Bull., vol. 34, no. 1, p. 74, March 30, 1924.
9. Some recent progress in isostatic investigations: Washington Acad. Sci., Jour., vol. 13, no. 13, pp. 267-270, July 19, 1923; abstract, Nat. Research Council, Bull., vol. 7, pt. 5, no. 41, pp. 95-96, January, 1924.
10. Earth movements in California: U. S. Coast and Geodetic Survey, Special Pub. no. 106, 22 pp., 6 figs., 1924.
11. The theory of isostasy in its relation to major earth movements: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2, pp. 1360-1366 [1924].
12. Abnormal densities in the earth's crust disclosed by analysis of geodetic data: Geog. Jour., vol. 63, no. 1, pp. 26-33, January, 1924.

Bowie, William—Continued.

13. Earth movements in California as disclosed by triangulation (abstract, with discussion by Arthur Keith, L. C. Graton, and A. C. Lawson): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 60–62, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, pp. 134–135, March, 1924.
14. The bearing of the theory of isostasy on some major geological problems: *Franklin Inst., Jour.*, vol. 198, no. 2, pp. 181–200, 12 figs., August, 1924.
15. On the size of the block of the earth's crust which may be independently in isostatic equilibrium: *Washington Acad. Sci., Jour.*, vol. 14, no. 15, pp. 355–362, September 19, 1924.
16. The causes and prediction of earthquakes: *Science, new ser.*, vol. 61, pp. 379–380, April 10, 1925.
17. Isostasy at Madrid meeting of International Geophysical Union: *Pan-Am. Geologist*, vol. 43, no. 5, pp. 337–344, June, 1925.
18. Isostatic condition of the United States as indicated by groups of gravity stations: *U. S. Coast and Geod. Survey, Serial no. 366*, 11 pp., 1 pl. (map), 1926.
19. Proposed theory, in harmony with isostasy, to account for major changes in the elevation of the earth's surface: *Gerlands Beiträge zur Geophysik*, Bd. 15, H. 2, pp. 103–115, 4 figs., 1926.
20. Geology from the isostatic viewpoint: *Sci. Monthly*, vol. 22, no. 1, pp. 5–18, 11 figs., January, 1926.
21. Notes on the Airy or "roots of mountains" theory: *Science, new ser.*, vol. 63, pp. 371–374, April 9, 1926.
22. Earthquakes from the isostatic viewpoint: *Washington Acad. Sci., Jour.*, vol. 16, no. 9, pp. 245–250, May 4, 1926.
23. The relation of isostasy to seismology: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 415–418, November, 1926.
24. (and others). Discussion following Symposium on the constitution of the earth and the inferences to be drawn from it: *Nat. Research Council, Bull.*, vol. 11, pt. 2, no. 56, pp. 33–39, November, 1926.
25. Relation of earthquakes to isostasy: *Nat. Research Council, Bull.*, vol. 11, pt. 2, no. 56, pp. 72–73, November, 1926.
26. *Isostasy*. xiv, 275 pp., 39 figs., New York, E. P. Dutton & Company, 1927.
27. The part played by isostasy in geophysics and geology: *Washington Acad. Sci., Jour.*, vol. 17, no. 5, pp. 101–117, March 4, 1927.
28. Some phases of the vertical movement of crustal material: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 253–258, October, 1927.
29. An early comment on isostatic compensation: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 433–434, May, 1928.
30. Comments on the Wegener hypothesis. In *Theory of continental drift*, pp. 178–186, *Am. Assoc. Petroleum Geologists*, 1928.
31. Gravity in western Canada: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 263–266, September, 1928.

Bowles, Oliver.

1. The technology of slate: *U. S. Bur. Mines, Bull.* 218, 132 pp., 41 figs., 6 pls., 1922.
2. A plea for economic mineralogy: *Am. Mineralogist*, vol. 7, no. 4, pp. 67–69, April, 1922.
3. Marble quarrying industry in Tennessee: *Tennessee, Dept. Education, Div. Geology, Bull.* 28, pp. 163–264, 29 figs., 16 pls., 1924.

Bowles, Oliver—Continued.

4. (and Farnsworth, Marie). Physical chemistry of the calcium sulphates, and gypsum reserves: *Econ. Geology*, vol. 20, no. 8, pp. 738-745, December, 1925.

Bowman, Isaiah. See Texas, Attorney General.

Bowman, W. F.

1. The South Dayton salt dome, Liberty County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 655-666, 5 figs., May-June, 1925; *Geology of salt dome oil fields*, pp. 558-559, 5 figs., 1926.

Bownocker, John Adams, 1865-1928. See also Stone, 11; White, I. C., 9.

1. Geologic map of Ohio. [Ohio, Geol. Survey], 1920. Scale, 1 to 500,000.
2. Depletion of natural gas in the Appalachian field: *Natural Gas Assoc. America, Proc. 14th Ann. Meeting*, pp. 253-272, 8 figs., 1920.
3. Rise and decline in production of petroleum in Ohio and Indiana: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 65, pp. 108-121, 2 figs., 1921; *Mining and Metallurgy*, no. 158, sec. 1, p. 34 (abstract), sec. 22, 12 pp., 2 figs., February, 1920; discussion by L. S. Panyity, *Am. Inst. Min. and Met. Eng. [Trans., preprint no. 988]*, pp. 14-16, 1920.
4. Our decreasing natural gas supply (abstract): *Science*, new ser., vol. 51, pp. 518-519, May 21, 1920.
5. Steel molding sand in Ohio: *Ohio Jour. Science*, vol. 21, no. 8, pp. 249-266, 1 fig., June, 1921.
6. Iron-molding sands in Ohio: *Ohio Jour. Sci.*, vol. 23, no. 1, pp. 25-40, January-February, 1923.
7. Glass sands of Ohio: *Ohio Jour. Sci.*, vol. 26, no. 1, pp. 25-41, January, 1926.
8. The Pittsburgh coal bed of Ohio: *Am. Inst. Min. and Met. Eng., Trans. [preprint]*, no. 1605, 10 pp., 1 fig. (map), October, 1926.
9. (and Stout, W.). Mineral industries of Ohio: *Ohio, Geol. Survey, 4th ser., Bull. 33*, 94 pp., 1928.

Boyd, H. E.

1. (and Hendricks, J. A.). Geological report of northern Nova Scotia relative to the possibilities for oil and gas: *Nova Scotia, Dept. Public Works and Mines, Ann. Rept. Mines*, 1927, pt. 1, pp. 185-242, 1928. Report of United States geologists on oil and gas possibilities of Nova Scotia: *Canadian Min. Jour.*, vol. 49, no. 29, pp. 586-588, June 20, 1928.

Boyd, W. H.

1. A new method of determining the rate of recession of Niagara Falls: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 22, sec. 4, pp. 1-12, 9 pls., March, 1928.

Boydell, H. C. See also Brunton, 10.

1. Some etching tests on pyrrhotite: *Econ. Geology*, vol. 17, no. 6, pp. 491-497, September, 1922.
2. The rôle of colloidal solutions in the formation of mineral deposits: *Inst. Min. and Met., Bull. no. 243*, 108 pp., December, 1924.
3. A physico-chemical theory of metasomatism: *Econ. Geology*, vol. 20, no. 4, pp. 388-391, June-July, 1925; (discussion), vol. 21, no. 8, pp. 806-807, December, 1926.
4. Veindikes of the Engineer mine [Atlin, British Columbia]: *Eng. and Min. Jour.-Press*, vol. 120, no. 14, pp. 538-539; October 3, 1925.

Boydell, H. C.—Continued.

5. Economic geology and the mining industry: *Inst. Min. and Met., Bull.* no. 254, 12 pp., November, 1925; discussion, no. 270, pp. 27–33, March, 1927; (with discussion), *Trans.*, vol. 35, pp. 76–101, 1926.
6. Wood tin in the Tertiary rhyolites of northern Nevada (discussion): *Econ. Geology*, vol. 20, no. 8, pp. 768–770, December, 1925.
7. A discussion on metasomatism and the linear “force of growing crystals”: *Econ. Geology*, vol. 21, no. 1, pp. 1–55, 8 figs., 2 pls., January–February, 1926.
8. The Camp Bird compound “veindike” (discussion): *Econ. Geology*, vol. 21, no. 2, pp. 185–190, March–April, 1926.
9. Relations between solubility and pressure (discussion): *Econ. Geology*, vol. 21, no. 7, pp. 712–717, November, 1926.
10. Successive banding around rock fragments in veins (discussion): *Econ. Geology*, vol. 22, no. 1, pp. 94–99, January–February, 1927.
11. Operative causes in ore deposition: *Inst. Min. and Met., Bull.* no. 277, 85 pp., 12 figs., October, 1927.
12. A physico-chemical theory of metasomatism (discussion): *Econ. Geology*, vol. 23, no. 1, pp. 105–108, January, 1928.
13. The wide dissemination of gold in northern Ontario: *Canadian Min. and Met., Bull.* no. 190, pp. 247–263, February, 1928; *Canadian Inst. Min. and Met., Trans.*, vol. 31, pp. 89–114 [1929].
14. Metasomatism and the pressure of growing crystals (discussion): *Econ. Geology*, vol. 23, no. 2, pp. 214–218; March–April, 1928.

Boyer, Charles Sumner.

1. List of Quaternary and Tertiary Diatomaceae from deposits of southern Canada: *Canada, Victoria Memorial Mus., Mus. Bull.* no. 45, 27 pp., November 9, 1926.

Boyle, J. Philip.

1. Geology of Wagoner County: *Oklahoma Geol. Survey, Bull.* no. 40–L, 18 pp., 6 figs., 2 pls., May, 1927.

Bradley, John H.

1. How old is the earth?: *Sci. Monthly*, vol. 23, no. 3, pp. 260–264, September, 1926.

Bradley, John Hodgdon, jr.

1. The Brachiopoda of the Maquoketa of Iowa: *Harvard Coll., Mus. Comp. Zool., Bull.*, vol. 64, no. 6, pp. 503–525, 2 pls., April, 1921.
2. Geology of the Philipsburg region of Quebec, with notes on correlations within the Beekmantown: *Jour. Geology*, vol. 31, no. 4, pp. 314–335, 2 figs. (incl. map), May–June, 1923.
3. Trilobites of the Beekmantown in the Philipsburg region of Quebec: *Canadian Field-Naturalist*, vol. 39, no. 1, pp. 5–9, 1 pl., January, 1925.
4. Stratigraphy of the Kimmswick limestone of Missouri and Illinois: *Jour. Geology*, vol. 33, no. 1, pp. 49–74, January–February, 1925; abstract, *Chicago, Univ., Abstracts of Theses*, vol. 3, pp. 217–220, April, 1927.
5. The earth and its history; a textbook of geology. 414 pp., 257 pp., Boston, Ginn and Company [1928].

Bradley, P. R.

1. Estimation of ore reserves and mining methods in Alaska Juneau mine: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1329, 19 pp., 2 figs., March, 1924.

Bradley, Walter Wadsworth.

1. California mineral production for 1918, with county maps: California State Min. Bur., Bull. no. 86, 212 pp., illus., 1919.
2. California mineral production for 1919, with county maps: California State Min. Bur., Bull. no. 88, 204 pp., illus., 1920.
3. California mineral production for 1920, with county maps: California State Min. Bur., Bull. no. 90, 218 pp., illus., 1921.
4. California mineral production for 1922: California State Min. Bur., Bull. no. 93, 188 pp., 12 figs., September, 1923.
5. California mineral production for 1923: California State Min. Bur., Bull. no. 94, 162 pp., 6 figs., September, 1924.
6. Magnesite in California: California State Min. Bur., Bull. no. 79, 147 pp., 62 illus., 11 pls., 1925.
7. California mineral production for 1924: California State Min. Bur., Bull. no. 96, 174 pp., 1 fig., 1925.
8. California mineral production for 1925: California State Min. Bur., Bull. no. 97, 172 pp., illus., September, 1926.
9. California mineral production for 1926: California, Dept. Nat. Res., Div. Mines and Mining, Bull. no. 100, 175 pp., illus., September, 1927.
10. Biennial report of the State mineralogist: California, Div. Mines and Mining, Mining in California, vol. 24, no. 4, pp. 354-360, October, 1928.

Bradley, Wilmot H. See also Sears, 5.

1. Fossil caddice fly cases from the Green River formation of Wyoming: Am. Jour. Sci., 5th ser., vol. 7, pp. 310-312, April, 1924.
2. An oil shale and its microorganisms from the Fuson formation of Wyoming: Am. Jour. Sci., 5th ser., vol. 8, pp. 228-234, 4 figs., September, 1924.
3. A contribution to the origin of the Green River formation and its oil shale: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 247-262, 410, March-April, 1925.
4. An interpretation of the Green River formation (abstract): Washington Acad. Sci., Jour., vol. 16, no. 3, pp. 74-75, February 4, 1926.
5. Shore phases of the Green River formation in northern Sweetwater County, Wyoming: U. S. Geol. Survey, Prof. Paper 140, pp. 121-131, 2 figs., 5 pls. (incl. map), February 13, 1926.
6. Fossil rhizopods of the Green River oil shale (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 160, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 161, March, 1926.
7. Tertiary and Recent fresh water algae reefs (abstract): Washington Acad. Sci., Jour., vol. 17, no. 9, pp. 232-233, May 4, 1927.
8. Zeolite beds in the Green River formation: Science, new ser., vol. 67, pp. 73-74, January 20, 1928.

Bragg, William H.

1. Analysis of crystal structure by X rays: Pan-Am. Geologist, vol. 42, no. 3, pp. 173-198, 2 pls., October, 1924.

Brainerd, A. E.

1. (and Keyte, I. A.). Some problems of the Chugwater-Sundance contact in the Bighorn district of Wyoming: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 7, pp. 747-752, 2 figs., July, 1927.
2. (and Keyte, I. A.). New faunal evidence from the Tensleep formation [Wyoming]: Jour. Paleontology, vol. 1, no. 2, pp. 173-174, 2 pls., August, 1927.

Bramlette, Milton N.

1. Bentonite in the Upper Cretaceous of Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 3, pp. 342-344, May-June, 1924.
2. Volcanic rocks in the Cretaceous of Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 3, pp. 344-346, May-June, 1924.
3. A subsurface correlation of the stratigraphic units from Russell County to Marion County, Kansas: Kansas State Geol. Survey, Bull. 10, 86-93, 1925.
4. Paleozoic formations penetrated by wells in Tishomingo County, northeastern Mississippi: U. S. Geol. Survey, Bull 781, pp. 1-10, 1 pl., July, 1925.
5. Pseudo-stratification in core recoveries: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 12, pp. 1167-1169, 1 fig., December, 1928.

Branner, George C.

1. Arkansas' mineral resources: The South's Development, Manufacturers Record, vol. 86, no. 24, pt. 2, pp. 356-361, 5 figs., December 11, 1924.
2. Arkansas Geological Survey [activities]: Pan-Am. Geologist, vol. 44, no. 4, pp. 322-323, 1 fig., November, 1925.
3. Outlines of Arkansas' mineral resources: Arkansas State Geol. Survey, 352 pp., illus., map, 1927.
4. The Arkansas coal fields: U. S., Bur. Mines, Tech. Paper 416, pp. 1-5, 1 fig., 1928.
5. Annual administrative report of the State geologist of Arkansas, Dec. 1, 1926-Dec. 1, 1927. 16 pp., Little Rock, 1928.

Branner, John Casper, 1850-1922.

1. Incidents in the history of the Geological Survey of Arkansas, and some conclusions to be drawn therefrom. In Ferguson, Jim G., Outlines of Arkansas geology, pp. 15-20, Little Rock, 1920.
2. Road-making materials in Arkansas. In Ferguson, Jim G., Outlines of Arkansas geology, pp. 126-132, Little Rock, 1920.

Branson, Edwin Bayer.

1. A geologic section from 40 miles west of St. Louis County to Jackson County, Missouri: Am. Jour. Sci., 4th ser., vol. 49, pp. 267-278, 1 fig., April, 1920.
2. Devonian of Missouri (abstract): Geol. Soc. America, Bull, vol. 32, no. 1, p. 35, March 31, 1921.
3. Geology of Costa Rica (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 90, March 31, 1922.
4. (and Williams, James S.) Evolution of *Stropheodonta demissa* (Conrad) in the Snyder Creek shales of Missouri (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, pp. 134-135, March 30, 1923.
5. The Devonian of Missouri: Missouri Bur. Geology and Mines, 2d ser., vol. 17, 279 pp., 10 figs., 79 pls., map [1924].
6. Paleozoic formation margins in Missouri: Am. Jour. Sci., 5th ser., vol. 8, pp. 317-322, 1 fig., October, 1924.
7. Course of the Gunnison River in Colorado (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 139, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 1, p. 80, February, 1925.
8. (and Williams, J. S.) Relationship of upper Devonian and lower Mississippian faunas of Missouri (abstract): Geol. Soc. America Bull., vol. 36, no. 1, pp. 216-217, March 30, 1925.

Branson, Edwin Bayer—Continued.

9. Origin and development of stream valleys (abstract): *Pan-Am. Geologist*, vol. 45, no. 2, p. 173, March, 1926.
10. Mississippian series of Missouri (abstract): *Pan-Am. Geologist*, vol. 45, no. 2, p. 174, March, 1926.
11. Correlation of Mississippian section of Rocky Mountain States and Mississippi Valley States (abstract): *Pan-Am. Geologist*, vol. 45, no. 3, p. 248, April, 1926.
12. Old shore lines and origin of oil (abstract): *Pan-Am. Geologist*, vol. 45, no. 3, p. 252, April, 1926.
13. Near shore conditions important in locating petroleum deposits: *Oil and Gas Jour.*, vol. 24, no. 45, pp. 94, 96, April 1, 1926.
14. Red beds of Arizona, New Mexico, Colorado, Utah, and Wyoming (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 137, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, pp. 78-79, February, 1927.
15. Valley development (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 140, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 80, February, 1927.
16. Devonian of Missouri, Illinois, and Iowa (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 226, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 3, p. 237, April, 1927.
17. Triassic-Jurassic "red beds" of the Rocky Mountain region: *Jour. Geology*, vol. 35, no. 7, pp. 607-630, 3 figs., October-November, 1927.
18. Some observations on the geography and geology of middle-eastern Costa Rica: *Missouri, Univ., Studies*, vol. 3, no. 1, pp. 27-72, 30 figs., January 1, 1928.
19. (and Mehl, M. G.). Triassic vertebrate fossils from Wyoming: *Science*, new ser., vol. 67, pp. 325-326, March 23, 1928.
20. (and Tarr, W. A.). New types of columnar and buttress structures: *Geol. Soc. America, Bull.*, vol. 39, no. 4, pp. 1149-1156, 2 pls., December 30, 1928. Columnar structures in limestone compared with buttress structures in volcanic agglomerate (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 225, March 30, 1928.
21. (and Mehl, M. G.). Auditory organs of some labyrinthodonts: *Geol. Soc. America, Bull.*, vol. 39, no. 2, pp. 485-489, 2 figs., June, 1928; abstract, no. 1, p. 301, March 30, 1928.

Brantley, J. Edward.

1. Petroleum possibilities of Alabama; Part II, Coastal Plain area: *Alabama, Geol. Survey Bull.* no. 22, pp. 121-220, 5 pls., 1 fig., 1920.
2. Résumé of the geology of the Gulf Coastal Plain: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 1, pp. 21-28, January-February, 1924.

Braun, J. G.

1. Alunite in south central Texas: *Eng. and Min. Jour.*, vol. 111, no. 5, p. 225, January 29, 1921.

Bray, Harriet G. See also Moon, 1.

1. (and Emery, Alden H.). Mineralization along the dikes of southern Vermont: *Ohio Jour. Sci.*, vol. 23, no. 2, pp. 83-88, March-April, 1923.

Breeze, Frederick J.

1. Abandoned channels in Randolph and Delaware counties, Indiana: *Indiana Acad. Sci., Proc. 38th Ann. Meeting*, 1922, pp. 95-98, 1 fig., 1923.

Breger, Carpel Leventhal.

1. Bacteria, ores, and oil deposits: Eng. and Min. Jour.-Press, vol. 116, no. 1, pp. 4-5, July 7, 1923.

Bremer, Bernard. See Twenhofel, 32.

Bretz, J. Harlen. See also Johnston, W. A., 5.

1. The late Pleistocene submergence in the Columbia Valley of Oregon and Washington: Jour. Geology, vol. 27, no. 7, pp. 489-506, 2 figs., October-November, 1919.
2. The Juan de Fuca lobe of the Cordilleran ice sheet; Jour. Geology, vol. 28, no. 4, pp. 333-339, 1 fig., May-June, 1920.
3. Stratigraphic problems in the Columbia Valley between Snake River and Willamette River (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 36-37, March 31, 1921.
4. Geology and mineral resources of the Kings quadrangle: Illinois State Geol. Survey, Bull. no. 43, pp. 205-304, 34 figs., 3 pls. (incl. map), 1923.
5. Glacial drainage on the Columbia Plateau (with discussion by M. M. Leighton and O. E. Meinzer); Geol. Soc. America, Bull., vol. 34, no. 3, pp. 573-608, 12 figs., September 30, 1923.
6. The channeled scablands of the Columbia Plateau: Jour. Geology, vol. 31, no. 8, pp. 617-649, 13 figs., 1 pl. (map), November-December, 1923.
7. The Dallas type of river channel: Jour. Geology, vol. 32, no. 2, pp. 139-149, 8 figs., February-March, 1924.
8. Modern conceptions of earth history: Sci. Monthly, vol. 18, no. 3, pp. 239-256, March, 1924.
9. The age of the Spokane glaciation: Am. Jour. Sci., 5th ser., vol. 8, pp. 336-342, 1 fig., October, 1924.
10. The Spokane flood beyond the channeled scablands: Jour. Geology, vol. 33, no. 2, pp. 97-115, February-March, no. 3, pp. 236-259, 17 figs., April-May, 1925; abstract, Geol. Soc. America, Bull., vol. 36, no. 1, p. 144, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 146, March, 1925.
11. The origin of man: Illinois State Acad. Sci., Trans., vol. 19, pp. 61-85, 1926.
12. Geological processes and the earth's history. In The nature of the world and of man, pp. 56-84, 1 pl., 1 insert (table of earth history), University of Chicago Press, 1926.
13. What caused the Spokane flood? (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 107, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 64, February, 1927.
14. Channeled scabland and the Spokane flood (abstract with discussion by W. C. Alden, James Gilluly, E. T. McKnight, G. R. Mansfield, O. E. Meinzer, and J. T. Pardee): Washington Acad. Sci., Jour., vol. 17, no. 8, pp. 200-211, April 19, 1927.
15. The Spokane flood; a reply [origin of physiographic features, Washington]: Jour. Geology, vol. 35, no. 5, pp. 461-468, July-August, 1927. [See also McKnight, 1.]
16. Bars of channeled scabland (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 159-160, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 1, p. 71, February, 1928.

Bretz, J. Harlen—Continued.

17. Alternative hypotheses for channeled scabland [Washington]: *Jour. Geology*, vol. 36, no. 3, pp. 193-223, 6 figs., April-May, 1928; no. 4, pp. 312-341, 4 figs., May-June, 1928.
18. The channeled scabland of eastern Washington: *Geog. Rev.*, vol. 18, no. 3, pp. 446-477, 27 figs., map, July, 1928.
19. Bars of channeled scabland [Washington]: *Geol. Soc. America, Bull.*, vol. 39, no. 3, pp. 643-701, 16 figs., 6 pls., September 30, 1928.

Brewer, Charles, jr.

1. Genetic relationship of oil reservoirs to shore line deposits: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 6, pp. 597-615, 6 figs., June, 1928.

Brewer, William Morten.

1. Taseko Valley iron ore deposits: British Columbia, Minister of Mines, *Ann. Rept.* 1919, pp. 241-251, 1920.
2. Some ore deposits of the Coast Range [British Columbia]: *Canadian Inst. Min. and Met., Monthly Bull.*, no. 127, pp. 1176-1191, November, 1922; *Trans.*, vol. 25, pp. 183-198 [1923].
3. Mineral resources tributary to the coast section of the Pacific Great Eastern Railway: *Canadian Inst. Min. and Met., Bull.* no. 160, pp. 798-808, 1 fig., 1 pl., August, 1925; *Trans.*, vol. 28, pp. 387-397, 1 fig. [1926].

Brewster, Edwin Tenney.

1. This puzzling planet, the earth's unfinished story; how men have read it in the past, and how the wayfarer may read it now. 328 pp., illus., Indianapolis, Bobbs-Merrill Company, c. 1928.

Bridenstine, I. J. See North, Lloyd, 1.

Bridge, Josiah. See also Drake, C. L., 10, 13.

1. (and Charles, B. E.). A Devonian outlier near the crest of the Ozark uplift: *Jour. Geology*, vol. 30, no. 6, pp. 450-458, 3 figs., September-October, 1922.
2. Ebb and flow springs in the Ozarks: *Missouri, Univ., School of Mines and Metallurgy, Bull.*, pp. 17-26, 6 figs., 3 pls., November, 1923.

Bridgman, P. W.

1. The thermal conductivity and compressibility of several rocks under high pressures: *Am. Jour. Sci.*, 5th ser., vol. 7, pp. 81-102, 4 figs., February, 1924.

Brigham, Albert Perry.

1. Cape Cod and the old colony: *Geog. Rev.*, vol. 10, no. 1, pp. 1-22, 1 fig., July, 1920.
2. Memoir of Frederick Valentine Emerson: *Assoc. Am. Geographers, Annals*, vol. 10, pp. 149-152 [1921?].
3. The Appalachian Valley: *Scottish Geog. Mag.*, vol. 40, no. 4, pp. 218-230, July 15, 1924.
4. *Geology*; revised and expanded by Frederick A. Burt. 544 pp., 313 figs., New York, D. Appleton and Company, 1928.

Brinsmade, Robert Bruce.

1. Mining districts near Zimapan, Hidalgo, Mexico: *Min. and Sci. Press*, vol. 123, no. 9, pp. 293-297, 3 figs., August 27, 1921.

Britton, W. E.

1. Twelfth biennial report of the Commissioners of the State Geological and Natural History Survey of Connecticut, 1925-26: Connecticut, State Geol. and Nat. Hist. Survey, Bull. no. 38, 23, pp., 1 pl., 1927.

Broadhead, G. C. See Boone County Hist. Soc.

Brock, Reginald Walter.

1. Eutsuk Lake district [British Columbia]: Canada, Geol. Survey, Summ. Rept., 1920, pt. A, pp. 81-94, 1 fig., 1921.
2. The education of a geologist: *Econ. Geology*, vol. 18, no. 6, pp. 595-597, September, 1923.
3. Physiography of Canada: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, pp. 686-692, 1 fig. [1924].
4. Structure of the Pacific region of Canada: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, pp. 776-783, 1 fig. (map) [1924].
5. Ore deposits of the Pacific region of Canada: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, pp. 815-820, 1 fig. (map) [1924].
6. Petroleum provinces of Canada: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2, pp. 1168-1173 [1924].
7. Conditions affecting mining in British Columbia: Canadian Inst. Min. and Met., Monthly Bull. no. 149, pp. 597-607, September, 1924.
8. Scientific ore finding: *Econ. Geology*, vol. 19, no. 7, pp. 674-676, November, 1924.
9. Miller, the geologist: Canadian Min. Jour., vol. 46, no. 9, February 27, 1925.
10. Success [eulogy of W. G. Miller]: *Econ. Geology*, vol. 20, no. 8, pp. 762-765, December, 1925.
11. (and Malcolm, Wyatt). Geological formation [of Canada]: Canada Yearbook, 1925, pp. 16-23, 2 figs. (maps), Canada, Dominion Bureau of Statistics, General Statistics Branch, Ottawa, 1926.
12. W. Lawrence Uglow: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 21, pp. x-xi, portr., 1927.
13. (and Schofield, S. J.) Geological history and metallogenetic epochs in western Cordillera of Canada: Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., pp. 591-606, 1928.
14. Volcanoes of the Canadian Cordillera: Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., pp. 688-710, 4 figs., 1928.

Brockway, E. R.

1. (and Owens, H. J.). Notes on the area lying between the northwestern edge of the Arbuckle Mountains and the Wildhorse sandstone: Oklahoma Acad. Sci., Proc., vol. 3 (Oklahoma, Univ., Bull., new ser. no. 271), pp. 95-96, October 1, 1923.

Broderick, Thomas Monteith. See also Ball, S. H., 1; Grout, F. F., 3, 4.

1. Some of the relations of magnetite and hematite: *Econ. Geology*, vol. 14, no. 5, pp. 353-366, 2 pls., 2 figs., August, 1919.
2. Detail stratigraphy of the Biwabik iron-bearing formation, east Mesabi district, Minnesota: *Econ. Geology*, vol. 14, no. 6, pp. 441-451, 2 pls., September-October, 1919.
3. Economic geology and stratigraphy of the Gunflint iron district, Minnesota: *Econ. Geology*, vol. 15, no. 5, pp. 422-452, 2 figs., July-August, 1920.

Broderick, Thomas Monteith—Continued.

4. (and Hohl, C. D.). Geophysical methods applied to exploration and geologic mapping in the Michigan copper district: *Econ. Geology*, vol. 23, no. 5, pp. 489-514, August, 1928.

Brodie, Walter M.

1. Coquina, the shell rock of Florida: *Min. and Sci. Press*, vol. 119, pp. 193-194, 2 figs., August 9, 1919.
2. Curious coal deposits in Missouri: *Coal Age*, vol. 16, pp. 876-881, 20 figs., December 11 and 18, 1919.

Brøgger, W. C.

1. Mindetale over Prof. Dr. Joseph Paxson Iddings: *Videnskapsselskapet i Kristiania, Forh.*, aar 1921, pp. 45-50, 1922.

Brokaw, Albert Dudley.

1. Interpretation of so-called paraffin dirt of Gulf coast oil fields (with discussion by W. E. Wrather, E. G. Woodruff, Lee Hager, W. G. Matteson, E. W. Shaw): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 61, pp. 482-500, 1920.

Brooks, Alfred Hulse, 1871-1924. See also Williams, M. Y., 16.

1. The application of geology to war (abstract): *Washington Acad. Sci., Jour.*, vol. 10, no. 11, pp. 331-333, June 4, 1920.
2. The future of Alaska mining: *U. S. Geol. Survey, Bull.* 714, pp. 5-57, 1 fig., 3 pls. (incl. map), 1921. Abstract, *Washington Acad. Sci., Jour.*, vol. 11, no. 12, pp. 282-283, June 19, 1921.
3. (and Martin, G. C.). The Alaskan mining industry in 1919: *U. S. Geol. Survey, Bull.* 714, pp. 59-95, 1921.
4. (and Martin, G. C.). Administrative report [mineral resources of Alaska, 1919]: *U. S. Geol. Survey, Bull.* 714, pp. 97-103, 1921.
5. (and Martin, G. C.). Gold, silver, copper, and lead in Alaska in 1919: *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 1, pp. 227-233, April 25, 1921.
6. The geological survey of Alaska: *Pan-Pacific Scientific Conference, First, Proc.*, Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 3, pp. 683-688, 1 fig., 1921.
7. Note on the Tertiary geology of Alaska: *Pan-Pacific Scientific Conference, First, Proc.*, Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 3, pp. 797-800, 1921.
8. The Alaska mining industry in 1920: *U. S. Geol. Survey, Bull.* 722, pp. 7-67, 1921.
9. The Alaskan mining industry in 1921: *U. S. Geol. Survey, Bull.* 739, pp. 1-50, 1922.
10. A petroleum seepage near Anchorage [Alaska]: *U. S. Geol. Survey, Bull.* 739, pp. 133-135, 1922.
11. The scientist in the Federal service: *Washington Acad. Sci., Jour.*, vol. 12, no. 4, pp. 73-115, February 19, 1922.
12. Gold, silver, copper, and lead in Alaska in 1920; mines report: *U. S. Geol. Survey, Mineral Resources*, 1920, pt. 1, pp. 441-446, April 24, 1922.
13. (and Capps, Stephen R.). The Alaska mining industry in 1922: *U. S. Geol. Survey, Bull.* 755, pp. 3-49, 1923.
14. (and Capps, S. R.). Gold, silver, copper, and lead in Alaska (mines report): *U. S. Geol. Survey, Mineral Resources*, 1922, pt. 1, pp. 637-642, 1925.

Brooks, Alfred Hulse—Continued.

15. Alaska's mineral resources and production, 1923: U. S. Geol. Survey, Bull. 773, pp. 3-52, 1925.
16. Mineral resources of Alaska, 1923; Administrative report: U. S. Geol. Survey, Bull. 773, pp. 63-69, 1925.

Brooks, Betty Watt.

1. A new species of fossil hackberry (*Celtis*) from the "Loup Fork" Miocene of Phillips County, Kansas: Carnegie Mus., Annals, vol. 18, nos. 2-4, pp. 299-304, 1 pl. June, 1928.

Brooks, William Keith, 1848-1908.

1. Most critical episode in evolution: Pan-Am. Geologist, vol. 37, no. 2, pp. 121-130, March, 1922.

Broom, Robert.

1. On the classification of the reptiles: Am. Mus. Nat. Hist., Bull., vol. 51, pp. 39-65, 13 figs., September 17, 1924.
2. Further evidence on the structure of the Eosuchia: Am. Mus. Nat. Hist., Bull., vol. 51, pp. 67-76, 4 figs., September 17, 1924.

Brouwer, Hendrik Albertus.

1. The horizontal movement of geanticlines and the fractures near their surface: Jour. Geology, vol. 29, no. 6, pp. 560-577, 8 figs., September-October, 1921.
2. Some similarities between the geology of California and parts of the Dutch East Indies: Science, new ser., vol. 56, pp. 388-389, October 6, 1922.
3. The movement of the central Atlantic ridge: Science, new ser., vol. 57, p. 235, February 23, 1923.
4. Production of trachyte and phonolite from pyroxene andesitic magma associated with limestone: Jour. Geology, vol. 36, no. 16, pp. 545-548, August-September, 1928.

Brown, Barnum. See also Matthew, 23, 27; Tait, 1.

1. (and O'Connell, Marjorie). Discovery of the Oxfordian in western Cuba (abstract): Geol. Soc. America, Bull., vol. 30, p. 152, March 31, 1919.
2. (and O'Connell, Marjorie). Correlation of the Jurassic formations of western Cuba: Geol. Soc. America, Bull., vol. 33, no. 3, pp. 639-664, 15 figs., September 30, 1922; abstract with discussion by T. W. Vaughan and C. Schuchert, vol. 33, no. 1, pp. 159-160, March 31, 1922.

Brown, Charles Wilson. See also Goldthwait, 1; Wentworth, 36.

1. Field experiment in isostasy (abstract with discussion by W. M. Davis): Geol. Soc. America, Bull., vol. 31, no. 1, p. 114, March 31, 1920.
2. Postglacial river changes in Rhode Island and continental tilt (abstract with discussion by J. B. Woodworth): Geol. Soc. America, Bull., vol. 31, no. 1, pp. 114-115, March 31, 1920.
3. (and Gedney, Edwin K.). Problems connected with a unique occurrence of syenite in New England (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 162, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 1, p. 72, February, 1928.

Brown, Ernest William.

1. The age of the earth from the point of view of astronomy: Am. Philos. Soc., Proc., vol. 61, no. 4, pp. 283-285, 1922.

Brown, Ernest William—Continued.

2. Tidal oscillations in Halemaumau, the lava pit of Kilauea: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 7-112, 4 figs., February, 1925.
3. Tides in lava (abstract with discussion): *Washington Acad. Sci., Jour.*, vol. 15, no. 18, pp. 421-422, November 4, 1925; *Bull. volcanologique*, 2° ann., nos. 5-6, p. 333, 1925.
4. The evidences for changes in the rate of rotation of the earth and their geophysical consequences: *Nat. Acad. Sci., Proc.*, vol. 12, no. 6, pp. 406-412, June, 1926; abstract, *Science*, new ser., vol. 63, p. 484, May 7, 1926.

Brown, George Granger.

1. Clays and shales of Michigan and their uses: *Michigan, Geol. Survey, Pub.* 36, geol. ser. 30, 444 pp., 69 figs., 41 pls. (incl. map) [1926].

Brown, G. H. See Ries, 5.

Brown, I. O. See Hager, D. S., 1.

Brown, John Stafford. See also Dake, 12; Woodring, 5.

1. Fault features of Salton Basin, California: *Jour. Geology*, vol. 30, no. 3, pp. 217-226, 1 fig., 1 pl. (map), April-May, 1922. Abstract, *Washington Acad. Sci., Jour.*, vol. 11, no. 17, p. 423, October 19, 1921.
2. Relation of sea water to ground water along coasts: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 274-294, 7 figs., October, 1922.
3. The Salton Sea region, California; a geographic, geologic, and hydrologic reconnaissance, with a guide to desert watering places: *U. S. Geol. Survey, Water-Supply Paper* 497, 292 pp., 18 figs., 19 pls. (incl. maps, 1923).
4. The hot springs of the Republic of Haiti: *Jour. Geology*, vol. 32, no. 5, pp. 384-399, July-August, 1924.
5. A study of coastal ground water with special reference to Connecticut: *U. S. Geol. Survey, Water-Supply Paper* 537, 101 pp., 20 figs., 7 pls., 1925.
6. Graphite deposits of Ashland, Alabama: *Econ. Geology*, vol. 20, no. 3, pp. 208-248, 2 figs. (incl. map), 2 pls., May, 1925.
7. The Nixon Fork country [Alaska]: *U. S. Geol. Survey, Bull.* 783, pp. 97-144, 3 figs., 2 pls. (maps), 1926.
8. Silver-lead prospects near Ruby [Alaska]: *U. S. Geol. Survey, Bull.* 783, pp. 145-150, 1 fig., 1926.
9. Ground water in the New Haven area, Connecticut: *U. S. Geol. Survey, Water-Supply Paper* 540, 206 pp., 19 figs., 15 pls., 1928.

Brown, Levi S.

1. The occurrence of leucoxene in some of the Permian Mid-Continent sediments: *Am. Mineralogist*, vol. 13, no. 6, pp. 233-235, June, 1928.

Brown, Ralph, H.

1. A "Blue Ridge" in New England: *Am. Jour. Sci.*, 5th ser., vol. 6, pp. 15-21, 2 figs., July, 1923.

Brown, Robert Wesley.

1. Origin of the folds of Osage County, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 5, pp. 501-513, 1 fig., May, 1928.
2. Occurrence of folds of the Osage type (discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 6, pp. 675-677, June, 1928.

Brown, Robert Wesley—Continued.

3. Experiments relating to factors causing localization of folds: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 6, pp. 617–623, 7 figs., June, 1928.
4. Experiments relating to the results of horizontal faulting: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 7, pp. 715–720, July, 1928.

Brown, Samuel Boardman, 1860–1926.

1. The terraces along the Monongahela River: *West Virginia Acad. Sci., Proc.*, vol. 1, no. 1 (*W. Va. Univ. Bull.*, ser. no. 27, no. 1), pp. 46–47, August, 1926.

Brown, Samuel C.

1. Notes on minerals from the Bedford, New York, Westchester County quarry: *Am. Mineralogist*, vol. 12, no. 9, p. 354, September, 1927.

Brown, Thomas Clachar.

1. Flooding of oil wells by fresh water (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 67–68, March 31, 1921.
2. Climatic conditions when coal beds were formed (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, p. 151, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 223, March 30, 1928.

Brown, W. Horatio.

1. A probable fossil glacier: *Jour. Geology*, vol. 33, no. 4, pp. 464–466, 1 fig., May–June, 1925.
2. Geological section along Rio de San Lorenzo in Sinaloa, Mexico: *Eng. and Min. Jour.-Press*, vol. 120, no. 18, pp. 691, 779, 1 fig., October 31, 1925.
3. The mineral zones of the White Cross district and neighboring deposits in Hinsdale County, Colorado: *Colorado School of Mines Mag.*, vol. 15, no. 11, pp. 5–15, 5 figs., March, 1926.
4. A note on the occurrence of alaskaite: *Am. Mineralogist*, vol. 12, no. 1, pp. 21–23, 1 fig., January, 1927.

Browning, C. P.

1. Canadian copper and its production: *Canadian Min. and Met. Bull.*, no. 184, pp. 944–972, 12 figs., August, 1927; *Canadian Inst. Min. and Met., Trans.*, vol. 30, pp. 194–224, 12 figs. [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, *Proc.*, pt. 1, pp. 601–631, 12 figs., 1928.

Browning, Iley Baker. See also Kentucky Geological Survey.

1. (and Russell, Philip G.). Coals and structure of Magoffin County, Kentucky: *Kentucky Geol. Survey, Fourth Series*, vol. 5, pt. 2, 552 pp., 2 maps, 1919.

Browning, W. C.

1. (and Snow, F. W.). Geology and operations of the Magma mine [Superior district, Pinal County, Arizona]: *Eng. and Min. Jour.-Press*, vol. 119, no. 5, pp. 197–201, 4 figs., January 31, 1925.

Bruce, Everend Lester. See also Alcock, 13.

1. Athapapuskow Lake district, Manitoba: *Canada, Geol. Survey, Summ. Rept.*, 1918, pt. D, pp. 1–2, 1919.
2. The district lying between Reed Lake and Elbow Lake, Manitoba: *Canada, Geol. Survey, Summ. Rept.*, 1918, pt. D, pp. 2–5, 1919.

Bruce, Everend Lester—Continued.

3. Gold quartz veins and scheelite deposits in southeastern Manitoba: Canada, Geol. Survey, Summ. Rept., 1918, pt. D, pp. 11-15, 1920.
4. Knee Lake district, northeastern Manitoba: Canada, Geol. Survey, Summ. Rept., 1919, pt. D, pp. 1-11, 2 figs., 1920.
5. Chalcopyrite deposits in northern Manitoba: Econ. Geology, vol. 15, no. 5, pp. 386-397, 1 pl., 2 figs., July-August, 1920.
6. The possibility of the use of sea planes in preliminary mapping of pre-Cambrian areas: Canadian Inst. Min. and Met., Monthly Bull. no. 118, pp. 224-229, February, 1922.
7. The early pre-Cambrian formations of northern Ontario and northern Manitoba: Jour. Geology, vol. 30, no. 6, pp. 459-471, 1 fig., September-October, 1922.
8. Iron formation of Lake St. Joseph: Ontario Dept. Mines, 31st Ann. Rept., vol. 31, pt. 8, pp. 1-32, 12 figs., map, 1923.
9. Eastern part of Lake St. Joseph: Ontario Dept. Mines, 31st Ann. Rept., vol. 31, pt. 8, pp. 33-38, 4 figs., map, 1923.
10. Area south of the west end of Lake St. Joseph: Ontario Dept. Mines, 31st Ann. Rept., vol. 31, pt. 8, pp. 39-40, 1923.
11. Geology of the upper part of the English River valley: Ontario Dept. Mines, 33d Ann. Rept., vol. 33, pt. 4, pp. 1-11, 1 fig., map, 1924.
12. Geology of the basin of Red Lake, District of Patricia: Ontario Dept. Mines, 33d Ann. Rept., vol. 33, pt. 4, pp. 12-39, 11 figs., map, 1924.
13. Mineral possibilities of northern Saskatchewan: Canadian Min. Jour., vol. 45, no. 26, pp. 618-621, 8 figs., June 27, 1924.
14. (and Greenland, C. W.). A low iron epidote from Porcupine [Ontario]: Am. Mineralogist, vol. 9, no. 10, pp. 199-201, 1 fig., October, 1924.
15. The Couthiching rocks of the Bear's Pass section, Rainy Lake [Ontario]: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 19, sec. 4, pp. 43-46, 1 pl., 1925.
16. Future of the Ontario iron deposits: Canadian Min. Jour., vol. 46, no. 3, pp. 71-75, 1 fig., January 16, 1925.
17. Gold deposits of Kenora and Rainy River districts: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 6, pp. 1-42, illus., map, 1925; in part, Canadian Min. Jour., vol. 47, no. 8, pp. 181-185, 7 figs., February 19; no. 11, pp. 264-265, 1 fig., March 12, 1926.
18. Red Lake area of Patricia [Ontario]: Canadian Inst. Min. and Met., Bull., no. 166, pp. 256-269, 6 pls., February, 1926; discussion by Geo. W. Bain, R. E. Hore, W. Lindgren, J. J. O'Neill, and others, no. 169, pp. 662-670, May, 1926; (with discussion) Trans. vol. 29, pp. 196-219, 7 pls. [1927].
19. Geology of McArthur, Bartlett, Douglas, and Geikie townships (Red-stone River area), District of Timiskaming: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 6, pp. 37-56, 4 figs., map, 1927.
20. (and Light, Margaret). Barytocelestite from the Kingden lead mines, Galetta, Ontario: Am. Mineralogist, vol. 12, no. 11, pp. 296-398, November, 1927.
21. Couthiching delta: Geol. Soc. America, Bull., vol. 38, no. 4, pp. 771-781, 1 fig., December 30, 1927; abstract no. 1, p. 121, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 70, February, 1927.
22. (and Hawley, J. E.). Geology of the Basin of Red Lake, District of Kenora (Patricia portion): Ontario Dept. Mines, 36th Ann. Rept., vol. 36, pt. 3, pp. 1-72, illus., map, 1928.

Bruce, Everend Lester—Continued.

23. Geology of the Red Lake and Woman Lake gold areas, northwestern Ontario: *Am. Inst. Min. and Met. Eng., Tech. Pub. no. 107*, 14 pp., 5 figs., March, 1928; *Trans.*, vol. 76, pp. 362–377, 5 figs., 1928; abstract, *Mining and Metallurgy*, vol. 9, p. 148, March, 1928; extract, *Min. Mag.*, vol. 38, no. 4, pp. 250–252, 1 fig., April, 1928.

Brucks, Ernest W.

1. The Luling field, Caldwell and Guadalupe Counties, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 632–654, 7 figs., 1 pl., May–June, 1925.
2. The geology of San Marcos quadrangle, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 8, pp. 825–851, 6 figs. (incl. map), August, 1927.

Brückner, Eduard.

1. Geochronologische Untersuchungen über die Dauer der Postglacialzeit in Schweden, in Finnland und in Nordamerika: *Zeitschr. Gletscherkunde*, Bd. 12, H. 1–2, pp. 39–57, July, 1921.
2. Forschungen über das diluviale Klima in Mexiko: *Zeitschr. Gletscherkunde*, Bd. 15, H. 4–5, pp. 286–289, November, 1927.

Brues, Charles Thomas.

1. Ancient insects; fossils in amber and other deposits: *Sci. Monthly*, vol. 17, no. 4, pp. 289–304, 13 figs., October, 1923.

Bruhl, Paul T.

1. Gold in McDuffie County, Georgia: *Eng. and Min. Jour.*, vol. 110, no. 6, p. 265, August 7, 1920.

Brumell, Henry Peareth H.

1. Graphite in Quebec and Alabama; a comparison: *Canadian Min. Inst., Bull. no. 88*, pp. 858–860, August, 1919; *Trans.*, vol. 22, pp. 378–405, 9 figs. [1920].
2. Graphite in Quebec, Canada: *Eng. and Min. Jour.*, vol. 109, pp. 548–550, February 28, 1920.

Brunton, Stopford. See also Reid, J. A., 2.

1. Deroche, Hodgins, Gaudette, and Shields townships, Algoma district, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1921, pt. D, pp. 27–33, map, 1922.
2. Jamaica, its geology and mining possibilities: *Min. Mag.*, vol. 26, no. 4, pp. 203–208, 1 fig. (map), April, 1922.
3. The west coast of Newfoundland: *Min. Mag.*, vol. 27, no. 5, pp. 265–273, 5 figs., November, 1922.
4. Gowganda silver district [Ontario]: *Canadian Min. Jour.*, vol. 45, no. 19, pp. 452–453, 4 figs., May 9, 1924.
5. Gold mining in Nova Scotia: *Canadian Min. Jour.*, vol. 45, no. 20, pp. 475–476, 1 fig., May 16, 1924.
6. Nova Scotian geology; new facts elicited by petrographical investigation: *Canadian Min. Jour.*, vol. 45, no. 29, pp. 689–693, 15 figs. (incl. map), July 18, 1924.
7. The gold fields of northwestern Quebec: *Min. Mag.*, vol. 31, no. 3, pp. 137–146, 8 figs., September, 1924.
8. Minerals in Jamaica: *Canadian Min. Jour.*, vol. 45, no. 51, pp. 1236–1241, 2 figs., December 19, 1924.

Brunton, Stopford—Continued.

9. Nova Scotian geology: *Min. Mag.*, vol. 31, no. 6, pp. 339-342, 1 fig. December, 1924.
10. The gold deposits of Nova Scotia; a new hypothesis concerning the structural features of the province: *Inst. Min. and Met., Bull.* no. 258, 18 pp. 2 figs., 5 pls. (incl. map), March, 1926; (with discussion by J. Mackintosh Bell, H. C. Boydell, and others), *Trans.*, vol. 35, pp. 356-389, 2 figs., 5 pls. (incl. map), 1926.
11. The gold deposits of Nova Scotia; an analysis of the history and present status and a hypothesis concerning the structural features of the province in relation to the deposition of gold: *Canadian Inst. Min. and Met., Bull.* no. 171, pp. 781-847, 29 figs., July, 1926; discussion, no. 175, pp. 1171-1172, November, 1926; (with discussion) *Trans.*, vol. 29, pp. 424-497, 29 figs. [1927].
12. Some observations on a so-called interbedded vein at Tangier, Nova Scotia: *Canadian Min. and Met., Bull.* no. 194, pp. 784-803, 55 figs., 1 pl., June, 1928.
13. A survey of certain gold districts in the Province of Nova Scotia: *Nova Scotia, Dept. Public Works and Mines, Ann. Rept. Mines*, 1927, pt. 2, pp. 223-759, map, 1928.

Bryan, Kirk. See also Longwell, 6; Meinzer, 15; Pardee, 11, 12; Twenhofel, 22, 29.

1. Habits of thought of a geologist applied to military problems (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 15, pp. 452-453, September 19, 1919.
2. Classification of springs: *Jour. Geology*, vol. 27, no. 7, pp. 522-561, 23 figs., October-November, 1919.
3. Geology and physiography of the Papago country, Arizona (abstract): *Washington Acad. Sci., Jour.*, vol. 10, no. 2, pp. 52-53, January 19, 1920.
4. Mountain pediments; a discussion of the erosion of desert ranges (abstract): *Geol. Soc. America, Bull.* vol. 31, no. 1, p. 152, March 31, 1920.
5. Origin of rock tanks and charcos: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 186-206, 12 figs., September, 1920.
6. The rôle of physiography in military operations: *Sci. Monthly*, vol. 11, no. 5, pp. 385-403, 3 figs., November, 1920.
7. Erosion and sedimentation in the Papago country, Arizona, with a sketch of the geology: *U. S. Geol. Survey, Bull.* 730, pp. 19-90, 22 figs., 5 pls. (incl. map), June 8, 1922.
8. Discussion on rock-fill dam, Lees Ferry, Arizona: *Am. Soc. Civil Eng., Proc.*, vol. 48, no. 7, pp. 1615-1627, 5 figs., September, 1922.
9. The hot-water supply of the Hot Springs, Arkansas: *Jour. Geology*, vol. 30, no. 6, pp. 425-449, 5 figs., September-October, 1922.
10. Geology and ground-water resources of Sacramento Valley, California: *U. S. Geol. Survey, Water-Supply Paper* 495, 285 pp., 10 figs., 19 pls. (incl. maps), 1923.
11. [Geological features of the Lees Ferry, Arizona, dam site]: *Am. Soc. Civil Eng., Trans.*, vol. 86, pp. 228-240, 5 figs. (incl. map), 1923.
12. Wind erosion near Lees Ferry, Arizona: *Am. Jour. Sci.*, 5th ser., vol. 6, pp. 291-307, 4 figs., October, 1923.

Bryan, Kirk—Continued.

13. Pedestal rocks in the arid Southwest: U. S. Geol. Survey, Bull. 760, pp. 1-11, 5 pls., December 15, 1923.
14. The hot springs of Arkansas: Jour. Geology, vol. 32, no. 6, pp. 449-459, August-September, 1924.
15. The Papago country, Arizona; a geographic, geologic, and hydrologic reconnaissance with a guide to desert watering places: U. S. Geol. Survey, Water-Supply Paper 499, 436 pp., 41 figs., 27 pls. (incl. maps), 1925.
16. Pedestal rocks: Eng. and Min. Jour.-Press, vol. 119, no. 4, pp. 172-173, January 24, 1925.
17. Pedestal rocks in stream channels: U. S. Geol. Survey, Bull. 760, pp. 123-128, 2 pls., April, 1925.
18. Date of channel trenching (arroyo cutting) in the arid Southwest: Science, new ser., vol. 62, pp. 338-344, October 16, 1925.
19. Ground water reconnaissance in Socorro County, New Mexico: New Mexico, State Engineer, 7th Bienn. Rept., pp. 77-87 [1926].
20. Ground water reconnaissance in De Baca County, New Mexico: New Mexico, State Engineer, 7th Bienn. Rept., pp. 88-102, 2 pls. [1926].
21. Recent deposits of Chaco Canyon, New Mexico, in relation to the life of prehistoric peoples of Pueblo Bonito (abstract): Washington Acad. Sci., Jour., vol. 16, no. 3, pp. 75-76, February 4, 1926.
22. San Pedro Valley, Arizona, and the geographic cycle (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 169-170, March 30, 1926: Pan-Am. Geologist, vol. 45, no. 2, p. 166, March, 1926.
23. (and Gidley, J. W.). Vertebrate fossils and their enclosing deposits from the shore of Pleistocene Lake Cochise, Arizona: Am. Jour. Sci., 5th ser., vol. 11, pp. 477-488, 2 figs., June, 1926.
24. Pedestal rocks formed by differential erosion: U. S. Geol. Survey, Bull. 790, pp. 1-15, 1 fig., 3 pls., November 27, 1926.
25. Channel erosion of the Rio Salado, Socorro County, New Mexico: U. S. Geol. Survey, Bull. 790, pp. 17-19, November 27, 1926.
26. The "Palouse soil" problem, with an account of elephant remains in wind-borne soil on the Columbia Plateau of Washington: U. S. Geol. Survey, Bull. 790, pp. 21-45, 4 pls., January 18, 1927.
27. The "Palouse soil" problem of the Columbia Plateau, Washington (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, pp. 120-121, March 4, 1927.
28. (and La Rue, E. C.). Persistence of features in an arid landscape; the Navajo twins, Utah: Geog. Rev., vol. 17, no. 2, pp. 251-257, 8 figs., April, 1927.
29. (and Robinson, H. F.). Erosion and sedimentation on the Zuñi watershed, New Mexico: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 158-159, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 1, pp. 70-71, February, 1928.
30. Historic evidence on changes in the channel of Rio Puerco, a tributary of the Rio Grande in New Mexico: Jour. Geology, vol. 36, no. 3, pp. 265-282, 2 figs., April-May, 1928.
31. Glacial climate in non-glaciated regions: Am. Jour. Sci., 5th ser., vol. 16, pp. 162-164, August, 1928.
32. State of New Mexico, Middle Rio Grande Conservancy district, geology of the State line dam site: New Mexico, State Eng., 8th Bienn. Rept., pp. 253-258 [1928].

Bryan, Kirk—Continued.

33. Niches and other cavities in sandstone at Chaco Canyon, New Mexico; *Zeitschr. Geomorphologie*, Bd. 3, H. 3, pp. 125-140, 8 pls., 1928.
34. Change in plant associations by change in ground-water level: *Ecology*, vol. 9, no. 4, pp. 474-478, October, 1928.

Bryan, L. L. See Stearns, 6.

Bryan, P. W.

1. Some geographical factors in the northern Appalachian coal field: *Scottish Geog. Mag.*, vol. 36, no. 4, pp. 232-244, 4 figs., October 15, 1920.

Bryant, William L. See also Hussakof, 1.

1. On the structure of *Eusthenopteron*: *Buffalo Soc. Nat. Sci., Bull.*, vol. 13, no. 1, pp. 1-59, 18 pls., 8 figs., 1919.
2. The Genesee conodonts: *Buffalo Soc. Nat. Sci., Bull.*, vol. 13, no. 2, 59 pp., 7 figs., 16 pls., 1921.
3. A new species of *Bothriolepis* from the upper Devonian of Canada: *Buffalo Soc. Nat. Sci., Bull.*, vol. 13, no. 3, pp. 54-55, 2 pls., 1924.
4. On the structure of *Palaeaspis* and on the occurrence in the United States of fossil fishes belonging to the family Pteraspidae: *Am. Philos. Soc., Proc.*, vol. 65, no. 4, pp. 256-271, 3 figs., 4 pls., 1926.
5. Evidence of the presence of chordates in the Cambrian (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 236, March 30, 1926.
6. Evidence of the presence of chordates in the Cambrian [*Eoichthys howelli*, St. Albans, Vermont]: *Vermont, State Geologist, 15th Rept.*, 1925-26, pp. 125-126, 1 fig., 1927.

Bryson, Herman J.

1. The mineral industry in North Carolina for 1924 and 1925: *North Carolina, Dept. Conservation and Development, Econ. Paper no. 60*, 64 pp., 1927.
2. The mining industry in North Carolina during 1926: *North Carolina, Dept. Conservation and Development, Econ. Paper no. 62*, 63 pp., 1928.
3. The story of the geologic making of North Carolina: *North Carolina, Dept. Conservation and Development, Educ. ser. no. 1*, 42 pp., 11 pls. (incl. map), 1928.

Buchanan, George S.

1. Early Pennsylvanian "red beds" in the Mid-Continent region: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 4, p. 814, July, 1925.
2. The distribution and correlation of the Mississippian of Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 12, pp. 1307-1320, 6 figs., December, 1927.

Bucher, Walter Herman.

1. On ripples and related sedimentary surface forms and their paleogeographic interpretation: *Am. Jour. Sci.*, 4th ser., vol. 47, pp. 149-210, 241-269, 15 figs., March and April, 1919.
2. The mechanical interpretation of joints: *Jour. Geology*, vol. 28, no. 8, pp. 707-730, 9 figs., November-December, 1920; vol. 29, no. 1, pp. 1-28, 11 figs., January-February, 1921: abstract, *Science*, new ser., vol. 51, pp. 519-520, May 21, 1920.
3. Cryptovolcanic structure in Ohio of the type of the Steinheim Basin (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 74-75, March 31, 1921.

Bucher, Walter Herman—Continued.

4. Probable cause of the localization of the major geosynclines (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 75, March 31, 1921.
5. Logan's explanation of the origin of Indiana's "kaolin": Econ. Geology, vol. 16, no. 7, pp. 481-492, November, 1921.
6. Further experiments on the fracturing of hollow brittle spheres and their bearing on major diastrophism (abstract with discussion by W. H. Hobbs): Geol. Soc. America, Bull., vol. 34, no. 1, pp. 81-82, March 30, 1923.
7. Jephtha Knobs of Shelby County (abstract): Science, new ser., vol. 58, p. 184, September 7, 1923; Kentucky Acad. Sci., Trans., vol. 1, p. 140, 1924.
8. The pattern of the earth's mobile belts: Jour. Geology, vol. 32, no. 4, pp. 265-290, 16 figs., May-June, 1924.
9. Geology of Jephtha Knob: Kentucky Geol. Survey, ser. 6, vol. 21, pp. 193-237, 11 figs., map, 1925.
10. Crypto-volcanic structures of Europe and America (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 149, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, pp. 148-149, March, 1925.
11. Ueber kryptovulkanische Erscheinungen in Ohio und Kentucky: Eclogae Geol. Helvetiae, vol. 19, no. 1, pp. 141-143, March, 1925.
12. Submarine denudation (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 143, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 1, p. 91, February, 1926.
13. Subcrustal expansion as a possible factor in earth diastrophism (abstract): Kentucky Acad. Sci., Trans., vol. 2, pp. 130-131, 1927.
14. Two test cases of conjugate joint systems (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 204, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, pp. 155-156, March, 1928.
15. Eolian versus subaqueous cross-bedding (abstract): Ohio Acad. Sci., Proc., vol. 8, pt. 4, p. 180, 1928; Ohio Jour. Sci., vol. 28, no. 3, p. 158, May, 1928.
16. Cryptovolcanic regions (abstract): Washington Acad. Sci., Jour., vol. 18, no. 19, pp. 521-524, November 19, 1928.

Buddington, Arthur Francis. See also Ferguson, 4; Smyth, 2.

1. Report on the pyrite and pyrrhotite veins in Jefferson and St. Lawrence counties, New York: New York State Defense Council, Bull. no. 1, 40 pp., 4 pls., November, 1917.
2. Foliation of the gneissoid syenite-granite complex of Lewis County, New York: New York State Mus. Bull., nos. 207, 208 (March-April, 1918), pp. 101-110, 6 pls. (incl. map), 1919.
3. Pre-Cambrian rocks of southeast Newfoundland: Jour. Geology, vol. 27, no. 6, pp. 449-479, 11 figs., September-October, 1919.
4. Mineral deposits of the Wrangell district, southeastern Alaska: U. S. Geol. Survey, Bull. 739, pp. 51-75, 4 figs., 1 pl. (map), 1922.
5. On some natural and synthetic melilites: Am. Jour. Sci., 5th ser., vol. 3, pp. 35-87, 11 figs. January, 1922.
6. An association of kaolinite with miarolitic structure: Jour. Geology, vol. 31, no. 2, pp. 149-151, February-March, 1923.
7. Alaskan nickel minerals: Econ. Geology, vol. 19, no. 6, pp. 521-541, 1 pl., September-October, 1924.
8. Mineral investigations in southeastern Alaska: U. S. Geol. Survey, Bull. 773, pp. 71-139, 5 figs., 2 pls. (maps), 1925.

Buddington, Arthur Francis—Continued.

9. Mineral investigations in southeastern Alaska: U. S. Geol. Survey, Bull. 783, pp. 41-62, 1 fig., 3 pls., 1926.
10. Submarine pillow lavas of southeastern Alaska: Jour. Geology, vol. 34, no. 8, pp. 824-828, November-December, 1926.
11. Abandoned marine benches in southeastern Alaska: Am. Jour. Sci., 5 ser., vol. 13, pp. 45-52, 5 figs., January, 1927.
12. Salmon River area in southeastern Alaska: Eng. and Min. Jour., vol. 123, no. 13, pp. 525-530, 3 figs., March 26, 1927.
13. Coincident variations of types of mineralization and of Coast Range intrusives [southeastern Alaska]: Econ. Geology, vol. 22, no. 2, pp. 158-179, 1 fig., March-April, 1927.
14. Coast Range intrusives of southeastern Alaska: Jour. Geology, vol. 35, no. 3, pp. 224-246, 2 figs., April-May, 1927.
15. What draws men into geology?: Science, new ser., vol. 68, pp. 112-113, August 13, 1928.

Budelman, Herman D.

1. Tonopah, Nevada's best-known silver district; Eng. and Min. Jour.-Press, vol. 118, no. 1, pp. 5-10, 5 figs. July 5, 1924.

Budge, W. E.

1. North Dakota clays: North Dakota, Univ., Departmental Bull., vol. 11, no. 1 (College of Engineering, Division of Mines and Mining Experiments, Bull. no. 9), pp. 38-45, 3 figs., January, 1926.

Budrow, L. R. See Mishler, 2.

Buehler, Henry Andrew. See also Boone County Hist. Soc., 1.

1. Biennial report of the State geologist . . . [1917-18]: Missouri Bur. Geology and Mines, 117 pp., 4 pls., (incl. 3 maps), 1919. [Mineral resources, pp. 33-112.]
2. Biennial report of the State geologist [for 1919-20]. 85 pp., 3 pls., Missouri Bur. Geology and Mines [1921].
3. Geological map of Missouri: Missouri, Bur. Geology and Mines, 1922. Scale 1:500,000. Revised, 1926.
4. Biennial report of the State geologist . . . [work of the Bureau of Geology and Mines for 1921 and 1922]: Missouri Bur. Geology and Mines, 133 pp., 5 pls., map [1923].
5. Mineral resources of Missouri: The South's Development, Manufacturers Record, vol. 86, no. 24, pt. 2, pp. 393-396, 6 figs., December 11, 1924.
6. Biennial report of the State geologist [for the years 1923 and 1924]: Missouri, Bur. Geology and Mines, 143 pp. [1925].
7. Missouri Bureau of Geology and Mines [activities]: Pan-Am. Geologist, vol. 44, no. 4, pp. 323-325, November, 1925.
8. Biennial report of the State geologist: Missouri, Bur. Geology and Mines, 108 pp., 2 pls. [1927].
9. Recent activities of Missouri Bureau of Geology and Mines: Pan-Am. Geologist, vol. 48, no. 1, pp. 77-80, August, 1927.

Buerger, M. J. See also Newhouse, 7.

1. Note on a method of oblique illumination: Am. Jour. Sci., 5th ser., vol. 13, pp. 262-263, March, 1927.
2. Optical notes on some of the variable contact minerals from Edenville, New York; Am. Mineralogist, vol. 12, no. 10, pp. 374-378, October, 1927.

Buerger, M. J.—Continued.

3. The plastic deformation of ore minerals, a preliminary investigation: galena, sphalerite, chalcopyrite, pyrrhotite, and pyrite: *Am. Mineralogist*, vol. 13, no. 1, pp. 1–17, January, no. 2, pp. 35–51, 20 figs., February, 1928.

Buffam, B. S. W.

1. Destor area, Abitibi County, Quebec: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 82–104, 1 fig., 1 pl., map, 1927.

Bullard, Fred M. See also Bybee, 3.

1. Notes on the paleontology of the Comanchean of Love County, Oklahoma: *Oklahoma Acad. Sci., Proc.*, vol. 3 (Oklahoma, Univ., Bull., new ser. no. 271), pp. 88–91, October 1, 1923.
2. Geology of Love County, Oklahoma: *Oklahoma Geol. Survey, Bull.* no. 33, 77 pp., 1 fig. 29 pls. (incl. map), January, 1925.
3. Geology of Marshall County, Oklahoma: *Oklahoma Geol. Survey, Bull.* no. 39, 101 pp., 5 figs., 21 pls. (incl. maps), April, 1926.
4. Lower Cretaceous of western Oklahoma; a study of the outlying areas of Lower Cretaceous in Oklahoma and adjacent States: *Oklahoma Geol. Survey, Bull.* no. 47, 116 pp., 7 figs., 11 pls. (incl. maps), October, 1928.

Bump, James D.

1. A huge fossil fish [*Portheus*, from near Hot Springs, South Dakota]: *Black Hills Engineer*, vol. 14, no. 2, pp. 99–101, 1 fig., March, 1926.

Bunn, John R. See George, H. C., 2; Tomlinson, 4.

Burbank, Wilbur S. See also Woodring, 5.

1. Additional data on the properties of pumpellyite and its occurrence in the Republic of Haiti, West Indies: *Am. Mineralogist*, vol. 12, no. 12, pp. 421–424, December, 1927.
2. Preliminary report on some thrust-faulting involving the Paleozoic formations in the Kerber Creek region of southern Colorado (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 172–173, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 78, February, 1928.

Burch, Albert.

1. (and Burchard, Ernest F.). *Minerales de cromo y de manganeso en Cuba: Cuba, Dirección Montes y Minas, Bol. Minas* no. 5, pp. 41–56, 1919.
2. (and Burchard, E. F.). *Chrome and manganese ores in Cuba: Cuba, Dirección Montes y Minas, Bol. Minas* no. 5, pp. 57–70, 1919.

Burchard, Ernest Francis. See also Allen, R. C., 2; Burch, 1, 2; Stone, 11.

1. Cement in 1917: *U. S. Geol. Survey, Mineral Resources*, 1917, pt. 2, pp. 343–380, 3 figs., February 4, 1919.
2. Iron ore, pig iron, and steel in 1917: *U. S. Geol. Survey, Mineral Resources*, 1917, pt. 1, pp. 557–603, 4 figs., April 28, 1919.
3. Manganese ore deposits of Cuba (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 13, pp. 385–386, July 19, 1919.
4. Chrome-ore deposits in Cuba: *Am. Inst. Min. and Met. Eng., Bull.* no. 153, pp. 2523–2546, 7 figs., September, 1919; *Trans.*, vol. 63, pp. 150–174, 8 figs., 1920. *Discussion, Mining and Metallurgy*, no. 157, p. 39, January, 1920.

Burchard, Ernest Francis—Continued.

5. Fluorspar and cryolite in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 2, pp. 317-329, 2 figs., December 9, 1919.
6. Marble resources of southeastern Alaska; with a section on the geography and geology by Theodore Chapin: U. S. Geol. Survey, Bull. 682, 118 pp., 26 pls. (incl. maps), 6 figs., 1920.
7. Manganese ore deposits in Cuba: Am. Inst. Min. and Met. Eng., Trans., vol. 63, pp. 51-104, 26 figs. 1920: (abstract), Bull. no. 147, pp. 591-595, March, 1919.
8. Cement in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 2, pp. 565-589, 3 figs., April 9, 1920.
9. Iron ore, pig iron, and steel in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 527-584, 5 figs., April 20, 1920.
10. Chromite and chromiferous iron ore in Cuba: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 716-725, May 15, 1920.
11. Cement in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 387-404, September 21, 1921.
12. Iron ore, pig iron, and steel in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 1, pp. 621-652, 1 fig., October 14, 1921.
13. (and Davis, H. W.). Iron ore, pig iron, and steel in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 1, pp. 365-399, 4 figs., January 23, 1922.
14. Cement in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 2, pp. 263-282, 2 figs., 1 pl. (map), March 7, 1922.
15. (and Davis, Hubert W.). Iron ore, pig iron, and steel in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 565-597, 4 figs., April 23, 1923.
16. (and Davis, Hubert W.). Iron ore, pig iron, and steel in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 341-376, 4 figs., January 25, 1924.
17. Bauxite associated with siderite: Geol. Soc. America, Bull., vol. 35, no. 3, pp. 437-448, September 30, 1924; abstract, vol. 35, no. 1, p. 109, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, pp. 153-154, March, 1924.
18. Iron-ore resources of the South: The South's Development, Manufacturers Record, vol. 86, no. 24, pt. 2 pp. 283-289, 1 fig., December 11, 1924.
19. (and Bagley, B. W.). Cement in 1923: U. S. Geol. Survey, Bull. 750, Mineral Resources, 1923, pt. 2, pp. 293-325, 1 fig., 1 pl. (map), December 26, 1924.
20. Bauxite in northeastern Mississippi: U. S. Geol. Survey, Bull. 750, pp. 101-146, 3 figs., January 9, 1925.
21. (and Davis, Hubert W.). Iron ore, pig iron, and steel in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 295-329, 4 figs., January 22, 1925.
22. (and Davis, Hubert W.) Iron ore, pig iron, and steel in 1924: U. S. Bur. Mines, Mineral Resources U. S., 1924, pt. 1, pp. 297-333, 4 figs., May 14, 1926.
23. The iron-ore situation in the South: U. S. Geol. Survey [Press Notice], 10 pp., March, 1927 (mimeographed). Reprinted under title, Alabama ores equal lake supply: Iron Age, vol. 119, no. 12, pp. 847-850, March 24, 1927.
24. The western Tennessee Valley iron region: Manufacturers Record, vol. 92, no. 3, pp. 69-73, 6 figs., July 21, 1927.

Burchard, Ernest Francis—Continued.

25. The brown iron ores of west-middle Tennessee: U. S. Geol. Survey, Bull. 795, pp. 53–112, 4 figs., 5 pls., October 20, 1927.
26. Certain brown iron ores in Alabama (discussion): Econ. Geology, vol. 23, no. 4, pp. 454–458, June–July, 1928.
27. Iron-ore reserves and production in Tennessee River basin: U. S., 70th Cong., 1st sess., H. R. Doc. no. 185, pp. 118–119, 1928.
28. Types of manganese deposits: Am. Manganese Producers Assoc., Proc. 1st Ann. Convention, pp. 108–111, Washington, 1928.

Burckhardt, Carlos.

1. Faunas jurásicas de Symon (Zacatecas) y faunas cretácicas de Zumpango del Río (Guerrero): Mexico, Inst. geol., Bol. no. 33, t. 1, 135 pp., 1919, t. 2 (atlas), 30 pls., 1921.
2. Faunas del Aptiano de Nazas, Durango: Mexico, Inst. geol., Bol. no. 45, 71 pp., 10 pls., 1925.
3. Cefalópodos del jurásico medio de Oaxaca y Guerrero: Mexico, Inst. geol., Bol. no. 47, 108 pp., 34 pls., 1927.

Burden, Douglas.

1. Niznaz Boko, the Great Hole in the Ground: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 26, no. 6, pp. 627–634, 9 figs., November–December, 1926.

Burkhalter, Edward.

1. The variety of clays of Washington and their adaptability to ceramic industry: Am. Ceram. Soc., Bull., vol. 11, no. 8, pp. 236–239, August, 1928.

Burling, Lancaster Demorest.

1. Graptolite localities of western North America, with description of two new formation names (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 127–128, March 31, 1921.
2. Cambro-Ordovician section near Mount Robson, western Canada (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 108–109, March 31, 1922.
3. The relations between the Purcell Range and the Rocky Mountains in British Columbia, Canada: Am. Jour. Sci., 5th ser., vol. 3, pp. 254–256, April, 1922.
4. A Cambro-Ordovician section in the Beaverfoot Range, near Golden, British Columbia: Geol. Mag., vol., 59, pp. 452–461, October, 1922.
5. Cambro-Ordovician section near Mount Robson, British Columbia: Geol. Soc. America, Bull., vol. 34, no. 4, pp. 721–748, December 30, 1923.
6. The origin of petroleum: Min. and Geol. Inst. India, Trans., vol. 18, pt. 3, pp. 119–167, May, vol. 19, pt. 2, pp. 171–173, November, 1924.

Burr, Freeman F.

1. Report [on the economic geology of Maine]: Maine, Public Utilities Commission, Second Ann. Rept. for 1916, pp. 17–103, 1 fig., 15 pls., Waterville, 1917.
2. Report [on mineral resources of Maine]: Maine Water Power Comm., First Ann. Rept., pp. 112–131, Augusta, Maine, 1920.

Burrard, Sidney.

1. Folding of mountain ranges—the argument from isostasy: Geol. Soc. America, Bull., vol. 33, no. 2, pp. 333–336, June 30, 1922.

Burroughs, Elizabeth Harding.

1. Bibliography of petroleum and allied substances in 1916: U. S. Bur. Mines, Bull. 165, 159 pp., 1919.
2. Bibliography of petroleum and allied substances, 1917: U. S. Bur. Mines, Bull. 180, 170 pp., 1920.
3. Bibliography of petroleum and allied substances in 1918: U. S. Bur. Mines, Bull. 189, 180 pp., 1921.
4. Bibliography of petroleum and allied substances in 1919 and 1920: U. S. Bur. Mines, Bull. 216, 374 pp., 1923.
5. Bibliography of petroleum and allied substances, 1921: U. S. Bur. Mines, Bull. 220, 230 pp., 1923.

Burroughs, Reginald W.

1. Development of diatomaceous earth in Nova Scotia: Canadian Min. and Met. Bull., no. 196, pp. 973-988, 6 figs., August, 1928.

Burroughs, Wilbur Greeley.

1. A Pottsville-filled channel in the Mississippian: Kentucky Geol. Survey, ser. 6, vol. 10, pp. 115-126, 2 figs., map, 1923.
2. The geography of the western Kentucky coal field: Kentucky Geol. Survey, ser. 6, vol. 24, 211 pp., 21 figs., 50 pls., 1924 [c. 1925].
3. Activities of geological surveys in Southern States: Eng. and Min. Jour.-Press, vol. 120, no. 9, p. 350, August 29, 1925.
4. The geography of the Kentucky Knobs: Kentucky Geol. Survey, ser. 6, vol. 19, 284 pp., 56 figs., 1926.
5. Geology of the Berea region: Kentucky Geol. Survey, ser. 6, vol. 26, pp. 155-208, 19 figs., 1927.

Burrows, Alfred Granville. See also Knight, C. W., 1.

1. (and Knight, C. W.). Lightning River gold area and a remarkable series series of lava flows [Ontario]: Canadian Min. Jour., vol. 40, pp. 83-86, February 12, 1919.
2. Matachewan gold area: Ontario Dept. Mines, 29th Ann. Rept., vol. 29, pt. 3, pp. 53-64, 10 figs., 1920.
3. Gowganda silver area: Ontario Dept. Mines, 29th Ann. Rept., vol. 29, pt. 3, pp. 77-88, 4 figs., map, 1920.
4. (and Hopkins, P. E.). Kirkland Lake gold area (second report): Ontario Dept. Mines, 29th Ann. Rept., vol. 29, pt. 4, 53 pp., illus., 2 maps, 1920.
5. Memorandum on part of the Goudreau gold area [Ontario]: Canadian Min. Jour., vol. 42, no. 31, pp. 621-622, August 5, 1921.
6. Gowganda and other silver areas: Ontario Dept. Mines, 30th Ann. Rept., vol. 30, pt. 3, 54 pp., figs. and maps, 1922.
7. Notes on the Goudreau gold area: Ontario Dept. Mines, 30th Ann. Rept., vol. 30, pt. 4, pp. 39-44, 4 figs., 1922.
8. (and Hopkins, P. E.). Boston-Skead gold area (second report): Ontario Dept. Mines, 30th Ann. Rept., vol. 30, pt. 6, pp. 1-26, 8 figs., map, 1922.
9. (and Hopkins, P. E.). Blanche River area: Ontario Dept. Mines, 31st Ann. Rept., vol. 31, pt. 3, 22 pp., illus., map, 1922.
10. Porcupine gold deposits [Ontario]: Canadian Min. Jour., vol. 44, no. 33, pp. 641-645, 5 figs., August 17, 1923.
11. The Porcupine area [Ontario]: Mining and Metallurgy, vol. 4, no. 201, pp. 474-475, September, 1923.

Burrows, Alfred Granville—Continued.

12. (and Hopkins, P. E.). Kirkland Lake gold area: Ontario Dept. Mines, 32d Ann. Rept., vol. 32, pt. 4, pp. 1-52, illus., 1925.
13. The Porcupine gold area: Ontario Dept. Mines, 33d Ann. Rept., vol. 33, pt. 2, pp. 1-84, illus., map, 1925.
14. Recent mining developments in Ontario: Canadian Inst. Min. and Met., Bull., no. 156, pp. 351-366, 1 fig., April, 1925.
15. The Porcupine porphyry stocks [Ontario]: Canadian Min. Jour., vol. 46, no. 26, pp. 632-633, 3 figs., June 26, 1925.
16. Occurrence of gold near Beardmore, Ontario: Canadian Min. Jour., vol. 46, no. 36, pp. 839-840, September 4, 1925.
17. Gowganda silver area: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 3, pp. 1-61, illus., map, 1926.
18. Silver deposits of Gowganda area: Canadian Min. Jour., vol. 47, no. 50, pp. 1167-1169, 8 figs., December 10, 1926.

Burt, Frederick A.

1. Soil mineralogy; a discussion of mineralogy in its application to soil studies. 82 pp., 6 figs., New York, D. Van Nostrand Company, 1927.
2. Genesis of quicksand deposits: Pan-Am. Geologist, vol. 47, no. 3, pp. 226-228, April, 1927.
3. The quicksands of Brazos County, Texas: Jour. Geology, vol. 35, no. 7, pp. 663-669, 4 figs., October-November, 1927.
4. Geology in engineering training: Pan-Am. Geologist, vol. 48, no. 5, pp. 353-358, December, 1927.
5. Melikaria; vein complexes resembling septaria veins in form: Jour. Geology, vol. 36, no. 6, pp. 539-544, 2 figs., August-September, 1928.

Burton, Eli Franklin.

1. Some of the physico-chemical properties of colloidal solutions and their relation to geological processes (abstract); Science, new ser., vol. 56, p. 175, August 11, 1922.

Burton, Fred R. See Dresser, 4.

Burton, George Edgar. See also Tomlinson, 4.

1. Design for logmeter: Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 332-333, 1 fig. 1919.
2. Relation of the base of the red beds to the oil pools in a portion of southern Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 2, pp. 173-177, 1 fig. (with discussion, pp. 326-327), March-April, 1921.

Burton, W. D.

1. Ore deposition at Premier mine, British Colombia: Econ. Geology, vol. 21, no. 6, pp. 586-604, 2 figs., September, 1926.

Burwash, Edward Moore Jackson. See also Johnston, W. A., 5.

1. A geological reconnaissance into Patricia, including part of sixth meridian line, and Wenasaga, Birch Lake, and Trout Lake rivers: Ontario Dept. Mines, 29th Ann. Rept., vol. 29, pt. 1, pp. 157-192, 11 figs., 1920.
2. Geology of the Canadian Rockies: Canadian Alpine Jour., vol. 11, pp. 97-109, 2 pls., 1920.
3. Orogenic and physiographic history of the Rocky Mountain geosynclinal: Canadian Alpine Jour., vol. 11, pp. 110-120, 1 pl., 1920.

Burwash, Edward Moore Jackson—Continued.

4. Glacial section at Calgary, Alberta (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 51, March 31, 1921.
5. The pre-Cambrian of western Patricia: *Jour. Geology*, vol. 30, no. 5, pp. 393-400, 1 fig., July-August, 1922.
6. Geology of Ontario-Manitoba boundary; from Winnipeg River to Blood-vein River, 1921: *Ontario Dept. Mines, 32d Ann. Rept.*, vol. 32, pt. 2, pp. 1-47, 14 figs., map, 1923.
7. Earlier glaciations of northern Manitoba (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, pp. 148-149, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 219-220, March 30, 1928.
8. The Fort Hope gold area [Ontario]: *Canadian Min. Jour.*, vol. 49, no. 44, pp. 893-895, 1 fig., November 2, 1928.

Burwell, Blair.

1. Carnotite mining in southwestern Colorado: *Eng. and Min. Jour.*, vol. 110, no. 16, pp. 755-758, 7 figs., October 16, 1920.

Bush, Reed D.

1. Geological structure and subsurface conditions: [California State Min. Bur.], *Report on Oil Possibilities underlying State Land at Ventura School for Girls*, pp. 6-8, 3 figs., 2 p's., Sacramento, 1926.

Bushnell, T. M.

1. The development of soil survey: *Indiana Acad. Sci., Proc.* 39th Ann. Meeting, 1923, vol. 33, pp. 69-72, 1924.
2. Notes on areal geology of Jasper County, Indiana: *Indiana Acad. Sci., Proc.*, vol. 34, pp. 133-135, 1925.
3. Some geological features of Wayne County, Indiana: *Indiana Acad. Sci., Proc.*, vol. 35, pp. 87-90, 2 figs., 1926.
4. Physiography of the Kankakee region: *Indiana Acad. Sci., Proc.*, vol. 37, pp. 141-142, 1928.

Bustamante, Miguel.

1. Yacimientos petrolíferos en el distrito sur de la Baja California: México, Secretaría de Industria, Comercio y Trabajo, Departamento de Petróleo, 72 pp., 6 pls., 2 maps, 1921.
2. Informe sobre la geología y la existencia de los yacimientos petrolíferos en el distrito sur de la Baja California (costa del Pacífico): *Bol. Petróleo*, vol. 11, no. 6, pp. 469-543, 8 pls. (incl. maps), June, 1921.

Butler, Bert Sylvenus. See also Dunlop, 1.

1. Relation of ore deposits to thrust faults in the central Wasatch region, Utah: *Econ. Geology*, vol. 14, no. 2, pp. 172-175, 1 pl., 1 fig., March-April, 1919.
2. Ore deposits of Utah: *Eng. and Min. Jour.*, vol. 108, pp. 605-611, 641-645, 15 figs., October 11 and 18, 1919.
3. Primary (hypogene) sulphate minerals in ore deposits: *Econ. Geology*, vol. 14, no. 8, pp. 581-609, 2 figs., December, 1919.
4. (and Loughlin, G. F., and others). The ore deposits of Utah: *U. S. Geol. Survey, Prof. Paper* 111, 672 pp., 74 figs., 57 pls. (incl. maps), 1920.
5. Copper in 1917: *U. S. Geol. Survey, Mineral Resources*, 1917, pt. 1, pp. 723-796, 4 figs., 1 pl., March 13, 1920.
6. Copper in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 1, pp. 877-935, 3 figs., September 28, 1920.

Butler, Bert Sylvenus—Continued.

7. (and others). Discussion of the deposits of native copper (abstract): Eng. and Min. Jour.-Press, vol. 115, no. 1, pp. 27-28, January 6, 1923.
8. A suggested explanation of the high ferric oxide content of limestone contact zones: Econ. Geology, vol. 18, no. 4, pp. 398-404, 1 fig., June-July, 1923.
9. Some relations between oxygen minerals and sulphur minerals in ore deposits: Econ. Geology, vol. 22, no. 3, pp. 233-245, 1 fig., May, 1927.

Butler, Gurdon Montague. See also Allen, M. A., 1, 3-5; Wilson, E. D., 3.

1. (and Allen, M. A.). Petroleum: Arizona Bur. Mines, Bull. no. 116, 45 pp., 8 figs., October 15, 1921; Arizona Min. Jour., vol. 5, no. 21, pp. 5-7, April 1; no. 22, pp. 5, 14-16, April 15; no. 24, pp. 8, 24-27, 8 figs., May 15, 1922.
2. (and Allen, M. A.). Uranium and radium: Arizona Bur. Mines, Bull. no. 117, 26 pp., December 1, 1921.

Butts, Charles. See also Weller, S., 1.

1. Geology and oil possibilities of the northern part of Overton County, Tennessee, and of adjoining parts of Clay, Pickett, and Fentress counties: Tennessee, State Geol. Survey, Bull. 24 (Pt. 2-A, Ann. Rept. 1919), 45 pp., 3 pls. (incl. map), 4 figs., 1919.
2. Geology of Barren County, Kentucky: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 3, pp. 147-177, 7 figs., map., October 1, 1919.
3. The Mississippian series of eastern Kentucky; a regional interpretation of the stratigraphic relations of the Subcarboniferous group based on new and detailed field examinations: Kentucky Geol. Survey, ser. 6, vol. 7, 188 pp., 7 figs., 81 pls., sections sheet, 1922.
4. The Loyalhanna limestone of southwestern Pennsylvania especially with regard to its age and correlation: Am. Jour. Sci., 5th ser., vol. 8, pp. 249-257, 4 figs., September, 1924.
5. Geology and mineral resources of the Equality-Shawneetown area (parts of Gallatin and Saline counties): Illinois State Geol. Survey, Bull. no. 47, 76 pp., 5 figs., 3 pls. (incl. maps), 1925. Revised edition of map (pl. I), 1928.
6. (and Nelson, Wilbur A.). Geology and mineral resources of the Crossville quadrangle, Tennessee: Tennessee, Dept. Educ., Div. Geology, Bull. 33-D, 41 pp., 1 fig., 12 pls. (incl. map), 1925.
7. Coal fields of Alabama: U. S., Bur. Mines, Tech. Paper 347, pp. 1-7, 1 fig., 1925; Alabama Geol. Survey, Bull. 31, pp. 1-7, 3 figs., 1926.
8. Geology of Alabama: The Paleozoic rocks: Alabama, Geol. Survey, Spec. Rept. no. 14, pp. 41-230, 4 figs., 74 pls., 1926.
9. Oil and gas possibilities at Early Grove, Scott County, Virginia: Virginia Geol. Survey, Bull. 27, 18 pp., 2 figs. (incl. map), 1927.
10. Fensters in the Cumberland overthrust block in southwestern Virginia: Virginia Geol. Survey, Bull. 28, 12 pp., 2 pls. (incl. map), 1927.
11. The Devonian of Alabama and the unconformity at its base (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, pp. 128-129, March 4, 1927.
12. The Devonian of Alabama: Am. Jour. Sci., 5th ser., vol. 14, pp. 365-380, 3 figs., November, 1927.

Butts, Charles—Continued.

13. Description of the Bessemer and Vandiver quadrangles: U. S. Geol. Survey, Geol. Atlas, Bessemer-Vandiver folio, Alabama (no. 221), 22, [2] pp., 8 maps, 2 sheets of illus., 1927.
14. Memorial of Eugene Allen Smith: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 51-65, portr., March 30, 1928.
15. Variations in Appalachian stratigraphy: Washington Acad. Sci., Jour., vol. 18, no. 13, pp. 357-380, 4 figs., July 19, 1928.

Buwalda, John Peter. See also Merriam, 25; Redwood, 1; Science Service, 3.

1. Fault system at the southern end of the Sierra Nevada, California (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 127, March 31, 1920.
2. Oligocene Equidae in the Marsh collection (abstract): Geol. Soc. America, Bull., vol. 21, no. 1, p. 224, March 31, 1920.
3. Tertiary history of the lower Snake River valley, southwestern Idaho (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 71, March 31, 1921.
4. Report on oil and gas possibilities of eastern Oregon: Oregon Bur. Mines and Geology, Mineral Resources of Oregon, vol. 3, no. 2, 47 pp., 3 figs., July, 1921.
5. A preliminary reconnaissance of the gas and oil possibilities of southwestern and south-central Idaho: Idaho, Bur. Mines and Geology, Pamphlet no. 5, 10 pp., July, 1923. [Mimeographed.]
6. Proceedings of the twenty-second annual meeting of the Cordilleran section of the Geological Society of America, held at Berkeley, California, March 17, 1923: Geol. Soc. America, Bull., vol. 35, no. 1, pp. 161-168, March 30, 1924.
7. Even-crested ridges as evidences of former peneplanation (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 167, March 30, 1924.
8. The age of the Payette formation and the old erosion surface in Idaho: Science, new ser., vol. 60, pp. 572-573, December 19, 1924.
9. Proceedings of the twenty-third annual meeting of the Cordilleran section of the Geological Society of America, held at Stanford University, California, May 2 and 3, 1924: Geol. Soc. America, Bull., vol. 36, no. 1, pp. 199-210, March 30, 1925.
10. Proceedings of the twenty-fourth annual meeting of the Cordilleran section of the Geological Society of America, held at Berkeley, California, February 20 and 21, 1925: Geol. Soc. America, Bull., vol. 37, no. 1, pp. 207-224, March 30, 1926.
11. Certain inferences regarding the nature of the movements along the Hayward fault zone [California] (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 212, March 30, 1926.
12. Certain events in the interesting geological history of Oregon: Oregon, Univ., Commonwealth Rev., vols. 8-9, nos. 4 and 1, pp. 121-129, October-January, 1926-7.
13. [Report on paleontological research]: Carnegie Inst. Washington, Year Book no. 25, 1925-6, pp. 4-5, December, 1926.
14. Proceedings of the twenty-fifth annual meeting of the Cordilleran section of the Geological Society of America, held at Berkeley, California, January 29 and 30, 1926: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 193-208, March 30, 1927.
15. Geological features of the John Day region, eastern Oregon (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 155, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 154, March, 1927.

Buwalda, John Peter—Continued.

16. Slope of Basin range faults and scarps (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 206, March 30, 1927.
17. Pleistocene and recent topographic changes in the Pacific coast States: *Nat. Research Council, Bull.* no. 61, pp. 39-43, July, 1927.
18. Paleontological and geological investigations in the John Day region of eastern Oregon: *Science, new ser.*, vol. 66, pp. 135-136, August 5, 1927.
19. (and Moore, Bernard M.). Age of the "Satsop" and the Dalles formations of Oregon and Washington: *Science, new ser.*, vol. 66, p. 236, September 9, 1927.
20. Proceedings of the twenty-sixth annual meeting of the Cordilleran section of the Geological Society of America, held at Los Angeles, California, January 28 and 29, 1927: *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 261-270, March 30, 1928.
21. Geological features of the John Day region, eastern Oregon (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 269-270, March 30, 1928.
22. Recent geological investigations in north-central Oregon (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 305, May, 1928.
23. Neocene erosion surface in central Oregon (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 311, May, 1928.
24. (and Moore, B. N.). Age of Dalles bed and "Satsop" formation and history of Columbia River gorge (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 313, May, 1928.
25. Report of investigations; John Day region: *Carnegie Inst. Washington, Year Book* no. 27, 1927-28, p. 235, December, 1928.

Buzzard, G. A.

1. The mineral resources of the region about La Salle: *Illinois State Acad. Sci., Trans.*, vol. 16, pp. 367-371, 1923.

Bybee, Halbert P.

1. Some recent notes on the Thrall oil field of Williamson County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 6, pp. 657-660, November-December, 1921.
2. (and Short, R. T.). The Lytton Springs oil field: *Texas, Univ., Bull.*, no. 2539, 69 pp., 3 figs., 9 pls. (incl. maps), December, 1925.
3. (and Bullard, Fred M.). The geology of Cooke County, Texas: *Texas Univ., Bull.*, no. 2710, pp. 5-61, 6 figs., 10 pls. (incl. map), January, 1928.

Byerly, Perry, jr. See also Macelwane, 7, 8, 14.

1. Dispersion of energy without dispersion of frequencies in transverse elastic waves in the earth: *Seismol. Soc. America, Bull.*, vol. 14, no. 2, pp. 91-135, 11 figs., June, 1924.
2. Notes on the intensity of the Santa Barbara earthquake between Santa Barbara and San Luis Obispo [California]: *Seismol. Soc. America, Bull.*, vol. 15, no. 4, pp. 279-281, December, 1925.
3. The depth of focus of two recent earthquakes and the depth of the surface layer of the earth in California: *Seismol. Soc. America, Bull.*, vol. 16, no. 1, pp. 1-9, 1 pl., March, 1926.
4. Tables of earthquake waves reflected at a discontinuity at a depth of fifty kilometers: *Seismol. Soc. America, Bull.*, vol. 16, no. 1, pp. 10-14, March, 1926.

Byerly, Perry, jr.—Continued.

5. A seismological note: *Science*, new ser., vol. 63, p. 307, March 19, 1926.
6. (and Mitchell, George D.). The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1924, to September 30, 1924: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 8, pp. 121-140, August 24, 1926.
7. (and Mitchell, George D.). The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station, October 1, 1924, to March 31, 1925: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 9, pp. 141-154, September 23, 1926.
8. The measurement of time on seismograms: *Seismol. Soc. America, Bull.*, vol. 16, no. 3, pp. 194-195, 2 figs., September, 1926.
9. The Montana earthquake of June 28, 1925, G. M. C. T.: *Seismol. Soc. America, Bull.*, vol. 16, no. 4, pp. 209-265, 1 fig., 11 pls., December, 1926.
10. The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1925, to September 30, 1925: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 10, pp. 155-180, January 18, 1927.
11. The registration of earthquakes at the Berkeley Station and at Lick Observatory Station from October 1, 1925, to March 31, 1926: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 11, pp. 181-199, January 18, 1927.
12. (and Jones, Austin E.). The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1926, to September 30, 1926: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 12, pp. 210-220, March 10, 1927.
13. Southern Nevada earthquake of August 21, 1925, and California earthquake of July 19, 1925 (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 205-206, March 30, 1927.
14. Seismic waves and the surface layers of the earth: *Nat. Research Council, Bull.* no. 61, pp. 88-90, July, 1927.
15. The Evergreen, California, earthquakes of July 19, 1925, and May 28, 1927: *Seismol. Soc. America, Bull.*, vol. 17, no. 3, pp. 137-146, 2 figs., September, 1927.
16. (and Jones, Austin E.). The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1926, to March 31, 1927: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 13, pp. 221-250, October 18, 1927.
17. The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1927, to September 30, 1927: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 14, pp. 251-272, April 4, 1928.
18. (and Dyk, Karl). The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1927, to March 31, 1928: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 15, 273-300, August 3, 1928.
19. Nature of first motion of two earthquakes (abstract): *Pan.-Am. Geologist*, vol. 49, no. 4, pp. 307-308, May, 1928.

Cabeen, Charles K. See Kerr, 5; Richardson, C. H., 5.

Cable, Emmett J.

1. Relation of the Wisconsin drift to the Iowan drift as revealed in Worth County: *Iowa Acad. Sci., Proc.* 1918, vol. 25, pp. 539-544, 5 figs. [1919].

Cable, Emmett J.—Continued.

2. The Iowan-Wisconsin border: *Iowa Acad. Sci., Proc.*, vol. 26, pp. 399–404, 3 figs. [1920].
3. The deep well at Laurens, Pocahontas County: *Iowa Acad. Sci., Proc.*, vol. 26, p. 405 [1920].
4. Some phases of the Pleistocene of Iowa; with special reference to the Peorian interglacial epoch. *Diss., University of Iowa*, 65 pp., 27 figs. [Cedar Falls, Iowa, Wolverton Bros. Printing Co., 1921.]
5. A note on a sink hole [Pocahontas County, Iowa]: *Iowa Acad. Sci., Proc.*, vol. 27, pp. 181–183, 3 figs. [1922].
6. A note of progress on the study of the Iowan-Wisconsin borders: *Iowa Acad. Sci., Proc.*, vol. 27, pp. 184–186, 1 fig. [1922].
7. Extension of Dakota sandstone into Cherokee County [Iowa] (abstract): *Pan-Am. Geologist*, vol. 46, no. 5, pp. 401–402, December, 1926.
8. Pleistocene bone deposits at Cherokee, Iowa (abstract): *Pan-Am. Geologist*, vol. 46, no. 5, p. 402, December, 1926.
9. The bone deposit at Cherokee [Iowa]: *Iowa Acad. Sci., Proc.*, 1926, vol. 33, pp. 179–181, 4 figs. [1927].
10. Outcrop of Cretaceous sandstone in Cherokee County: *Iowa Acad. Sci., Proc.*, 1927, vol. 34, pp. 243–245, 2 figs. [1928].

Cadman, W. K.

1. Phantograph model: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 12, pp. 1300–1303, 1 fig., December, 1926.
2. The Golden Lanes of Greenwood County, Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 11, pp. 1151–1172, 10 figs., 2 pls., November, 1927.

Cady, Gilbert Haven.

1. Lateral erosion in the upper Illinois Valley by the Chicago outlet (abstract): *Illinois Acad. Sci., Trans.*, vol. 9, p. 210 [1917].
2. The New Richmond sandstone of northern Illinois (abstract): *Illinois Acad. Sci., Trans.*, vol. 9, p. 210 [1917].
3. Geology and mineral resources of the Hennepin and La Salle quadrangles: *Illinois State Geol. Survey, Bull.* no. 37, 136 pp., 6 pls. (incl. maps), 36 figs., 1919.
4. Coal resources of District V (Saline and Gallatin counties): *Illinois State Geol. Survey, Cooperative Mining Series, Bull.* 19, 135 pp., 9 pls. (incl. maps), 22 figs., 1919.
5. Valuable pyrite in Illinois coal beds: *Coal Age*, vol. 16, pp. 136–140, 9 figs., July 24, 1919.
6. The structure of the La Salle anticline: *Illinois State Geol. Survey, Bull.* no. 36, pp. 85–179, 9 pls. (incl. maps), 9 figs., 1920.
7. Coal resources of District IV [Illinois]: *Illinois State Geol. Survey, Cooperative Mining Series, Bull.* 26, 247 pp., 31 figs., 8 pls. (incl. maps), 1921.
8. The Illinois pyrite inventory of 1918: *Illinois State Geol. Survey, Bull.* no. 38, pp. 427–431, map, 1922.
9. Low-sulphur coal in Illinois: *Am. Inst. Min. and Met. Eng., Bull.* no. 151, pp. 1113–1115, 1 fig., July, 1919; *Trans.*, vol. 63, pp. 641–648, 1 fig., 1920; *Illinois State Geol. Survey, Bull.* no. 38, pp. 433–434, 1 fig., 1922; discussion, *Mining and Metallurgy*, no. 157, sec. 12, pp. 34–39, January, 1920.
10. The microscope and the decadence of geology: *Eng. and Min. Jour.-Press*, vol. 118, no. 8, pp. 303–304, August 23, 1924.

Cady, Gilbert Haven—Continued.

11. Structure of parts of northeastern Williamson and western Saline counties: Illinois State Geol. Survey, Report of Investigations no. 2, 20 pp., 2 figs., 3 pls. (incl. maps), 1925.
12. The areal geology of Saline County: Illinois State Acad. Sci., Trans., vol. 19, pp. 250-272, 5 figs. (incl. maps), 1 pl., 1926.
13. Coal stripping possibilities in southern and southwestern Illinois: Illinois, State Geol. Survey, Cooperative Mining Series, Bull. 31, 59 pp., 2 figs., 8 pls. (maps), 1927.
14. Stratigraphic subdivisions of Pennsylvanian system of Illinois (abstract): Pan-Am. Geologist, vol. 47, no. 5, p. 372, June, 1927.

Cahen, Edward.

1. Selenium: Mineral Foote-Notes, vol. 3, no. 5, pp. 5-16, 5 figs., September-October, 1919.

Cairnes, Clive Elmore.

1. Coquihalla area, British Columbia: Canada, Geol. Survey, Summ. Rept., 1920, pt. A, pp. 23-41, 1 fig., 1921.
2. Geological explorations in Yale and Similkameen mining divisions, southwestern British Columbia: Canada, Geol. Survey, Summ. Rept., 1922, pt. A, pp. 88-126, 1 fig., 3 maps, 1 pl., 1923.
3. Lucky Four mining property, Cheam Range, British Columbia: Canada, Geol. Survey, Summ. Rept., 1922, pt. A, pp. 127-133, 1 pl., 1923.
4. Coquihalla area, British Columbia: Canada, Geol. Survey, Mem. 139, 187 pp., 8 figs., 10 pls., map, 1924.
5. Reconnaissance of Silver Creek, Skagit and Similkameen rivers, Yale district, B. C.: Canada, Geol. Survey, Summ. Rept., 1923, pt. A, pp. 46-80, 2 figs., 3 pls., map, 1924.
6. Hillsbar gold claims, Yale district, B. C.: Canada, Geol. Survey, Summ. Rept., 1923, pt. A, pp. 81-83, 1924.
7. An occurrence of nickel ore in Yale mining division, British Columbia: Canadian Min. Jour., vol. 45, no. 48, p. 1164, November 28, 1924.
8. Pemberton area, Lillooet district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1924, pt. A, pp. 76-99, 1 pl., map, 1925.
9. Nickeliferous mineral deposit, Emory Creek, Yale mining division, British Columbia: Canada, Geol. Survey, Summ. Rept., 1924, pt. A, pp. 100-105, 3 pls., 1925.
10. Preliminary report on Slocan mining area, British Columbia: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 182-221, 1926.
11. Alps-Alturas group, Slocan mining division, British Columbia: Canada, Geol. Survey, Summ. Rept., 1926, pt. A, pp. 45-51, 1 pl., 1927.
12. Observations on Lillooet Valley, British Columbia, with particular reference to its geology and mineral deposits: Canadian Min. Jour., vol. 48, nos. 7 and 8, pp. 140-144, 162-166, 6 figs., February 18 and 25, 1927.
13. Notes on the mining industry in Slocan district, British Columbia, with special reference to the geology and mineral deposits of the Slocan mining area: Canadian Min. and Met. Bull., no. 178, pp. 179-200, 9 figs. (incl. maps), February, 1927; Canadian Inst. Min. and Met., Trans., vol. 30, pp. 252-273, 9 figs. (incl. maps) [1928].

Calhoun, Fred Harvey Hall.

1. Memorial of Patrick Hues Mell: Geol. Soc. America, Bull., vol. 30, pp. 43-47, portr., March 31, 1919.

Calhoun, Fred Harvey Hall—Continued.

2. Mineral resources of South Carolina: The South's Development, Manufacturers Record, vol. 86, no. 24, pt. 2, pp. 410-411, December 11, 1924.

Callahan, William H. See Gillson, 10; Newhouse, 6.

Calkins, F. E.

1. Principles of copper deposits: Mining and Metallurgy, vol. 4, no. 202, pp. 507-512, October, 1923.

Calkins, Frank Cathcart. See also Butler, 4; Vaughan, 16.

1. Thrust faulting in the Cottonwood district, Wasatch Mountains, Utah (abstract): Washington Acad. Sci., Jour., vol. 11, no. 17, p. 422, October 19, 1921.

Calman, W. T.

1. Dr. C. D. Walcott's researches on the appendages of trilobites: Geol. Mag., new ser., dec. 6, vol. 6, pp. 359-363, 1 fig., 1 pl., August, 1919.

Calvache Dorado, Antonio.

1. El manganeso de Bueycito: Cuba, Dirección de montes y minas, Bol. minas, no. 7, pp. 78-84, 1923.
2. Resumen de la historia de la minería de Cuba: Cuba, Dirección de montes y minas, Bol. minas, no. 8, pp. 22-35, August, 1925.
3. Reconocimiento geológico preliminar del terreno en que se construirán las distintas secciones del acueducto definitivo para Santiago de Cuba: Cuba Dirección de montes y minas, Bol. minas, no. 8, pp. 36-44, 9 figs., August, 1925.
4. (and Allende, Roque). Informe geológico sobre el proyecto de acueducto para la ciudad de Santiago de Cuba: Cuba, Dirección de montes y minas, Bol. minas; no. 9, pp. 7-30, 16 figs., 1926.
5. Informe sobre una formación granítica proxima á Santiago de Cuba—Report about a granite bed near Santiago de Cuba. 14 pp., 3 pls., Oficina de ingeniería, Santiago de Cuba, 1926.

Calvert, William R.

1. Gas at Farnham, Utah: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 3, pp. 293-295, May-June, 1923.
2. Geologic features of Val Verde County, Texas, and adjacent area: Oil and Gas Jour., vol. 26, no. 36, pp. 81-82, 85, 1 fig., January 26, 1928.

Camacho, Heriberto.

1. Las aguas subterráneas en Tlanalapan, Dto. de Apan, E. de Hidalgo: Mexico, Inst. geol., Anales no. 8, pp. 5-23, 3 pls. (incl. maps), 1920.
2. Informe acerca de las aguas subterráneas del Valle de Tecamachalco ó Valsequillo, Estado de Puebla: Mexico, Inst. geol., Anales no. 8, pp. 25-38, 8 pls., 1920.
3. Las aguas subterráneas del valle de Morelia, Estado de Michoacán: Mexico, Inst. geol., Anales, t. 2, nos. 1-3, pp. 5-17, 11 pls. (incl. map), 1925.
4. Apuntes acerca de la actividad del Popocatepetl en relación con la sismología: Mexico, Inst. geol., Anales, t. 2, nos. 1-3, pp. 38-67, 16 pls. (incl. map), 1925.
5. Apuntes para la hidrología de la región sud-oriental del Estado de Querétaro: Mexico, Inst. geol., Anales, t. 2, nos. 1-3, pp. 68-88, 13 pls., 1925.

Cameron, Alan Emerson. See also Allan, 10.

1. Hay and Buffalo rivers, Great Slave Lake, and adjacent country [Mackenzie]: Canada, Geol. Survey, Summ. Rept., 1921, pt. B, pp. 1-44, map, 1922.
2. Postglacial lakes in the Mackenzie River basin, Northwest Territories, Canada: Jour. Geology, vol. 30, no. 5, pp. 337-353, 14 figs., July-August, 1922.

Camp, Charles L.

1. Triassic Chinle formation in Southwest (abstract): Pan-Am. Geologist, vol. 49, no. 3, pp. 304-305, May, 1928.

Camp, Samuel H. See Richardson, C. H., 2.

Campbell, A. M.

1. A new deposit of high-potash feldspar in Ontario: Eng. and Min. Jour.-Press, vol. 115, no. 22, pp. 979-980, 1 fig., June 2, 1923.

Campbell, C. M.

1. The Granby mines at Phoenix [British Columbia]; Canadian Min. Inst., Trans., vol. 22, pp. 155-179, 13 figs. [1920].
2. The Similkameen district of British Columbia: Eng. and Min. Jour., vol. 111, no. 17, pp. 702-705, 7 figs., April 23, 1921.

Campbell, Donald G.

1. Palladium in Alaskan lode deposits: Min. and Sci. Press, vol. 119, pp. 520-522, 2 figs., October 11, 1919.

Campbell, E. E.

1. The Hidden Creek mine and its operations [Granby Bay, British Columbia]: Canadian Min. Inst., Trans., vol. 22, pp. 135-154, 12 figs., [1920].
2. Mineral occurrences in the Stewart district [British Columbia]: Canadian Min. Inst., Monthly Bull., no. 95, pp. 220-224, March, 1920; Trans., vol. 23, pp. 391-395 [1921].

Campbell, Ian.

1. (and Miller, A. D.). Nepheline basalt in Richland Parish gas field, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 10, pp. 985-993, 3 figs., 1 pl., October, 1928.

Campbell, J. Morrow.

1. The profession of ore hunting: Econ. Geology, vol. 17, no. 2, pp. 139-141, March-April, 1922.
2. Origin of the iron formation of the Mesabi range (discussion): Econ. Geology, vol. 18, no. 2, pp. 195-197, March, 1923.
3. Genesis of igneous ore deposits: Econ. Geology, vol. 20, no. 5, pp. 491-495, August, 1925.

Campbell, Marius Robinson. See also Eby, 5; LaForge, 4.

1. Character of coal in the Thomas bed near Harrison, West Virginia: U. S. Geol. Survey, Bull. 716, pp. 239-241, February 18, 1921.
2. Origin of the scenic features of the Glacier National Park [Montana]. 42 pp., 23 figs., map, National Park Service, Washington, D. C., 1921.
3. Guidebook of the western United States; Part E, The Denver & Rio Grande Western route: U. S. Geol. Survey, Bull. 707, xi, 266 pp., 63 figs., 96 pls., 10 maps, 1922.

Campbell, Marius Robinson—Continued.

4. Geology of the coal formations [of Kentucky]: U. S. Bureau of Mines, Technical Paper 308, pp. 7-10, 1922.
5. The Twentymile Park district of the Yampa coal field, Routt County, Colorado: U. S. Geol. Survey, Bull. 748, 82 pp., 11 figs., 13 pls., (incl. map), 1923.
6. The coal fields of Ohio: U. S., Bur. Mines, Tech. Paper 344, pp. 1-5, 2 figs., 1923.
7. (and Holden, R. J.). Broad thrust fault in the central Appalachians (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 115, March 30, 1924.
8. Value of airplane photographs in geologic mapping (abstract): Washington Acad. Sci., Jour., vol. 14, no. 7, p. 163, April 4, 1924.
9. (and others). Geologic map of Wyoming: U. S. Geol. Survey, Geologic Atlas of the United States, State of Wyoming, 1925. Scale, 1:500,000.
10. (and others). The Valley coal fields of Virginia: Virginia Geol. Survey, Bull. no. 25, pp. 1-300, 30 figs., 27 pls. (incl. map), 1925. Extract, Metamorphism of Virginia coals: Pan-Am. Geologist, vol. 44, no. 1, pp. 62-65, August, 1925.
11. David Talbot Day: Am. Inst. Min. and Met. Eng., Trans., vol. 71, pp. 1071-1073, 1 fig. (portr.), 1925; Mining and Metallurgy, vol. 6, no. 222, pp. 302-304, 1 fig. (portr.), June, 1925.
12. The meaning of cut-off meanders in tidal streams: Washington Acad. Sci., Jour., vol. 17, no. 5, pp. 125-126, March 4, 1927.
13. Meaning of meanders in tidal streams: Geol. Soc. America, Bull., vol. 38, no. 3, pp. 537-555, 3 figs., September, 1927; abstract, no. 1, p. 129, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, pp. 74-75, February, 1927.
14. Geographic terminology: Assoc. Am. Geographers, Annals, vol. 18, no. 1, pp. 25-40, March, 1928.
15. Classification of coal from the viewpoint of the geologist: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 156, pp. 25-27, November, 1928.
16. Late geologic deformation of the Appalachian Piedmont as determined by river gravels (abstract): Science, new ser., vol. 68, pp. 649-650, December 28, 1928.

Campbell, R. B. See Holman, 1.

Campbell, Stewart.

1. Twenty-third annual report of the mining industry of Idaho for the year 1921. 152 pp. [1922].
2. Twenty-fourth annual report of the mining industry of Idaho for the year 1922. 209 pp. [1923].
3. Twenty-fifth annual report of the mining industry of Idaho for the year 1923. 121 pp., illus. [1924].
4. Twenty-sixth annual report of the mining industry of Idaho for the year 1924. 249 pp., illus. [1925].
5. Twenty-seventh annual report of the mining industry of Idaho for the year 1925. 270 pp., illus. [1926].
6. Twenty-eighth annual report of the mining industry of Idaho for the year 1926. 269 pp., illus. [1927].
7. Twenty-ninth annual report of the mining industry of Idaho for the year 1927. 280 pp., illus. [1928].

Campbell, Stewart—Continued.

8. A geologic error regarding the Wood River district [Idaho]: Eng. and Min. Jour., vol. 126, no. 8, pp. 287-289, 3 figs. (incl. map), August 25, 1928.

Campbell, William Wallace.

1. Notes on the problem of the origin of lunar craters [including notes on Meteor Crater, Arizona]: Astronomical Soc. Pacific, Pub., vol. 32, no. 186, pp. 126-138, 2 figs., April, 1920.

Camsell, Charles.

1. (and Malcolm, Wyatt). The Mackenzie River basin: Canada, Geol. Survey, Mem. 108, 154 pp., 14 pls., 1 fig., map, 1919.
2. Mercury deposits of Kamloops Lake [British Columbia]: Canada, Geol. Survey, Summ. Rept., 1918, pt. B, pp. 17-22, 1919.
3. Boring operations for oil in the vicinity of Vancouver, British Columbia: Canada, Geol. Survey, Summ. Rept., 1918, pt. B, pp. 22-25, 1919.
4. Copper Mountain, Gun Creek [British Columbia]; Canada, Geol. Survey, Summ. Rept., 1918, pt. B, pp. 25-28, map, 1919.
5. Platinum investigations in British Columbia: Canada, Geol. Survey, Summ. Rept., 1918, pt. B, pp. 28-30, 1919.
6. Coquihalla map area, B. C.: Canada, Geol. Survey, Summ. Rept., 1919, pt. B, pp. 30-35, 1920.
7. Silver deposits at Stump Lake, B. C.: Canada, Geol. Survey, Summ. Rept., 1919, pt. B, pp. 35-36, 1920.
8. Geological features of the gold deposits of British Columbia: Canadian Min. Inst., Bull. no. 88, pp. 860-866, August, 1919.
9. The origin and history of the great canyon of Fraser River: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 14, sec. 4, pp. 45-59, 1921.

Canada, Department of Mines.

1. Natural resources map of parts of Ontario and Quebec showing itinerary of American Institute of Mining and Metallurgical Engineers . . . 1923; scale 35 miles to 1 inch: Mining and Metallurgy, vol. 4, no. 202, October, 1923.

Canada, Department of Mines, Mines Branch.

1. Summary report of investigations made by the Mines Branch during the calendar year ending December 31, 1920, 87 pp., 7 figs., 1922.

Canada, Geological Survey.

1. [Map of] Explored routes in a belt traversed by the Canadian National Railways between Penhurst and Longlac, Algoma and Thunder Bay districts, Ontario. Scale, 4 miles to 1 inch. Canada, Geol. Survey, Pub. no. 1766, 1920.
2. Reported discovery of placer gold in Labrador: Canadian Min. Jour., vol. 44, no. 21, pp. 396-397, May 25, 1923.
3. Geological map of the Dominion of Canada and Newfoundland. Geology compiled by G. A. Young. Scale 1:6,336,000 or 1 inch to 100 miles. Third edition, 1924. (Pub. no. 1277.)

Canu, Ferdinand. See also Wade, B., 3.

1. (and Bassler, Ray S.). Fossil Bryozoa from the West Indies: Carnegie Inst. Washington, Pub. no. 291, pp. 73-102, 7 pls., 1919.

Canu, Ferdinand—Continued.

2. (and Bassler, Ray S.). North American early Tertiary Bryozoa: U. S. Nat. Mus., Bull. 106, 879 pp., 279 figs., 162 pls., 1920.
3. (and Bassler, Ray S.). Studies on the cyclostomatous Bryozoa: U. S. Nat. Mus., Proc., vol. 61, art. 22, 160 pp., 40 figs., 28 pls., 1922.
4. (and Bassler, Ray S.). North American later Tertiary and Quaternary Bryozoa: U. S. Nat. Mus., Bull. 125, 302 pp., 38 figs., 47 pls., 1923.
5. (and Bassler, Ray S.). American and European Tertiary Bryozoa: Geol. Soc. America, Bull., vol. 35, no. 4, pp. 847-850, December 30, 1924.
6. (and Bassler, Ray S.). Studies on the cyclostomatous Bryozoa: U. S. Nat. Mus., Proc., vol. 67, art. 21, 124 pp., 46 figs., 31 pls., March 29, 1926.
7. (and Bassler, Ray S.). Classification of the cheilostomatous Bryozoa: U. S. Nat. Mus., Proc., vol. 69, art. 14, 42 pp., 1 pl., 1927.
8. (and Bassler, Ray S.). Fossil and recent Bryozoa of the Gulf of Mexico region: U. S. Nat. Mus., Proc., vol. 72, art. 14, 199 pp., 35 figs., 34 pls., 1928.

Cape, Emily Palmer.

1. Lester F. Ward; a personal sketch. xi. 208 pp., 5 pls. (incl. portr.), New York, G. P. Putnam's Sons, 1922.

Capps, Stephen Reid. See also Brooks, 13, 14.

1. The Kantishna region, Alaska: U. S. Geol. Survey, Bull. 687, 116 pp., 17 pls. (incl. maps), 6 figs., 1919. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 9, no. 15, pp. 439-440, September 19, 1919.
2. Gold lode mining in the Willow Creek district [Alaska]: U. S. Geol. Survey, Bull. 692, pp. 177-186, 1919. Abstract by G. C. Martin, Washington Acad. Sci., Jour., vol. 9, no. 20, p. 633, December 4, 1919.
3. Mineral resources of the western Talkeetna Mountains [Alaska]: U. S. Geol. Survey, Bull. 692, pp. 187-205, 1 pl. (map), 1919. Abstract by G. C. Martin, Washington Acad. Sci., Jour., vol. 9, no. 20, p. 633, December 4, 1919.
4. Mineral resources of the upper Chulitna region [Alaska]: U. S. Geol. Survey, Bull. 692, pp. 207-232, 1 pl. (map), 1919. Abstract, Washington Acad. Sci., Jour., vol. 9, no. 20, p. 633, December 4, 1919.
5. The Cold Bay district [Alaska]: U. S. Geol. Survey, Bull. 739, pp. 77-116, 2 figs., 1 pl. (map), 1922.
6. Geology and mineral resources of the region traversed by the Alaska Railroad: U. S. Geol. Survey, Bull. 755, pp. 73-150, 1 fig., 7 pls., 1924.
7. An early Tertiary placer deposit in Alaska (abstract); Washington Acad. Sci., Jour., vol. 14, no. 15, pp. 373-374, September 19, 1924.
8. Willow Creek district [Alaska]: U. S. Geol. Survey, Bull. 773, pp. 39-43, 1925.
9. An early Tertiary placer deposit in the Yentna district [Alaska]: U. S. Geol. Survey, Bull. 773, pp. 53-61, 2 figs., 1925.
10. (and Short, M. N.). A ruby silver prospect in Alaska [upper Susitna Basin]: U. S. Geol. Survey, Bull. 783, pp. 89-95, 1 fig., 1926.
11. Geology of the upper Matanuska Valley, Alaska: U. S. Geol. Survey, Bull. 791, 92 pp., 5 figs., 16 pls. (incl. maps), 1927.
12. The Toklat-Tonzona River region [Alaska]: U. S. Geol. Survey, Bull. 792, pp. 73-110, 2 pls. (maps), 1927.

Capps, Stephen Reid—Continued.

13. Exploration in the Mount Spurr region, Alaska (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 154-155, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, pp. 68-69, February, 1928.

Carlson, Charles Gordon. See also Waring, 5.

1. A test of the feldspar method for the determination of the origin of metamorphic rocks: *Jour. Geology*, vol. 28, no. 7, pp. 632-642, 1 fig., October-November, 1920.
2. Geological notes on a part of southern Trinidad, British West Indies: *Econ. Geology*, vol. 20, no. 2, pp. 153-167, 2 figs. (incl. map), March-April, 1925.
3. Geology of the Saginaw oil field, Michigan, and discussion of Michigan's oil prospects: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 9, pp. 959-965, 3 figs., September, 1927.

Carman, Joel Ernest.

1. Some subsurface rock channels and cavities filled with glacial material: *Ohio Jour. Sci.*, vol. 22, no. 5, pp. 125-128, March, 1922.
2. The Monroe division of rocks in Ohio: *Jour. Geology*, vol. 35, no. 6, pp. 481-506, 1 fig. (map), August-September, 1927; abstract, *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 136, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 78, February, 1927.
3. Fossil footprints from the Pennsylvanian system in Ohio: *Geol. Soc. America, Bull.*, vol. 38, pp. 385-395, 3 pls., June 30, 1927.
4. The rock section at the O'Shaughnessy dam [Scioto River, Delaware County, Ohio]: *Ohio Jour. Sci.*, vol. 27, no. 6, pp. 289-294, 1 fig., December, 1927.
5. Résumé of the geology of Lucas County, Ohio (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, pp. 173-174, 1928; *Ohio Jour. Sci.*, vol. 28, no. 3, pp. 151-152, May, 1928.

Carmichael, Ferga.

1. Oxidation of sulphides: *Toronto, Univ., Studies, Geol. ser.*, no. 22, pp. 29-36, 1926.
2. Catalytic action in the oxidation of sulphides and arsenides: *Toronto, Univ., Studies, Geol. ser.* no. 24, pp. 47-53, 1927.

Carmody, P.

1. Trinidad as a field for the study of the origin of petroleum (with discussion): *Inst. Petroleum Technologists, Jour.*, vol. 7, no. 28, pp. 298-325, October, 1921.

Carpenter, Everett. See also Greene, 10.

1. The Morrison field, Pawnee County, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 10, pp. 1087-1096, 7 figs., October, 1927.
2. Oil and gas in Oklahoma; geology of Washington County: *Oklahoma Geol. Survey, Bull.* no. 40-V, 20 pp., 5 figs., 4 pls. (incl. map), January, 1928.

Carpenter, Ford A.

1. Early records of earthquakes in southern California: *Seismol. Soc. America, Bull.*, vol. 11, no. 1, pp. 1-3, March, 1921.

Carpenter, Frank M.

1. Fossil insects from the lower Permian of Kansas: *Harvard Coll., Mus. Comp. Zoology, Bull.*, vol. 67, no. 13, pp. 437-444, 3 pls., July, 1926.

Carpenter, Frank M.—Continued.

2. A fossil insect from the lower Permian of the Grand Canyon: U. S. Nat. Mus., Proc., vol. 71, art. 23, 4 pp., 1 pl., 1927.
3. A scorpion-fly from the Green River Eocene: Carnegie Mus., Annals, vol. 18, pt. 1, pp. 241–248, 1 fig., 1 pl., March, 1928.

Carpenter, Jay A.

1. The Divide district [near Tonopah, Nevada]: Eng. and Min. Jour., vol. 107, pp. 859–861, 1 fig., May 17, 1919.
2. The Kelly silver mine at Randsburg, California: Eng. and Min. Jour. vol. 108, pp. 940–943, 3 figs., December 27, 1919.

Carpenter, Margaret.

1. Micrology of the upper Washita: Texas, Univ., Bull. no. 2544, pp. 71–74, 2 pls., 1925.

Carsey, Dorothy Ogden.

1. Foraminifera of the Cretaceous of central Texas: Texas, Univ., Bull., no. 2612, 56 pp., 8 pls., July, 1926.

Carson, Carlton M.

1. Pliocene faunal zones in southern California: Pan-Am. Geologist, vol. 43, no. 4, pp. 265–270, May, 1925.
2. Some new species from the Pliocene of southern California, with a few changes in nomenclature: Southern California Acad. Sci., Bull., vol. 24, pt. 2, pp. 31–35, 1 pl., August 17, 1925.

Carstarphen, F. C.

1. The internal heat of the earth: Colorado School of Mines Mag., vol. 17, no. 3, pp. 5–8, 1 fig., July, 1927.

Carter, Annice.

1. (and Painter, Louise). Bell Creek-Fall Creek Valley [Delaware and Henry counties]: Indiana Acad. Sci., Proc., vol. 36, pp. 103–105, 2 figs., 1927.

Cartwright, C. E.

1. Notes on the nonmetallic minerals of the Lillooet district [British Columbia]: Canadian Inst. Min. and Met., Bull., no. 160, pp. 824–830, 3 figs., August, 1925; Trans., vol. 28, pp. 414–420, 3 figs. [1926].

Cartwright, Lon D., jr.

1. Loss of color of red sandstone upon deposition: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 1, pp. 85–87, 1 fig., January, 1928.
2. Sedimentation of the Pico formation in the Ventura quadrangle, California: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 3, pp. 235–369, 12 figs. (incl. map), March, 1928.

Case, Ermine Cowles.

1. Permo-Carboniferous time versus Permo-Carboniferous conditions: Michigan Acad. Sci., 20th Ann. Rept., p. 82, 1918.
2. The environment of life in the late Paleozoic in North America; a paleogeographic study. Carnegie Inst. Washington, Pub. no. 283, 273 pp., 7 figs., paleogeographic map, 1919.
3. Study of the vertebrate fauna and paleogeography of North America in the Permian period, with especial reference to world relations: Carnegie Inst. Washington, Year Book No. 17, 1918, p. 310, February, 1919.

Case, Ermine Cowles—Continued.

4. Notes on a specimen of *Stylemys nebrascensis* Leidy: Am. Jour. Sci., 4th ser., vol. 47, pp. 435-438, 5 figs., June, 1919.
5. On a very perfect thoracic shield of a large labyrinthodont in the geological collections of the University of Michigan: Michigan, Univ., Mus. Zool., Occ. Papers no. 82, 3 pp., 1 pl., April 28, 1920.
6. Preliminary description of a new suborder of phytosaurian reptiles with a description of a new species of *Phytosaurus*: Jour. Geology, vol. 28, no. 6, pp. 524-535, 6 figs., September-October, 1920.
7. [Report on investigations of Permo-Carboniferous deposits]: Carnegie Inst. Washington, Year Book no. 19, p. 402, January, 1921.
8. *Desmatosuchus suprensis* from the Dockum Triassic beds of western Texas (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 136, March 31, 1921.
9. Criteria for the determination of the climatic environment of extinct animals: Geol. Soc. America, Bull., vol. 32, no. 3, pp. 333-338, September 1, 1921.
10. Study of the vertebrate fauna and paleogeography of North America in the Permian period, with especial reference to world relations: Carnegie Inst. Washington, Year Book no. 20, 1921, pp. 443-445, February, 1922.
11. New reptiles and stegocephalians from the Upper Triassic of western Texas. 84 pp., 33 figs., 14 pls., Carnegie Institution of Washington (Pub. no. 321), October, 1922.
12. Study of the vertebrate fauna and paleogeography of North America in the Permian period, with especial reference to world relations [report of progress]: Carnegie Inst. Washington, Year Book no. 21, 1922, p. 395, 1923.
13. Study of the vertebrate fauna and paleogeography of North America in the Permian period, with special reference to world relations: Carnegie Inst. Washington, Year Book no. 22, p. 349, 1924.
14. A possible explanation of fenestration in the primitive reptilian skull, with notes on the temporal region of the genus *Dimetrodon*: Michigan, Univ., Mus. Geology, Contr., vol. 2, no. 1, pp. 1-12, 5 figs., July 10, 1924.
15. Environmental conditions of the Permian vertebrates: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2, pp. 1047-1049 [1924].
16. Some new specimens of Triassic vertebrates in the museum of geology of the University of Michigan: Michigan Acad. Science, Arts, and Letters, Papers, vol. 4, pt. 1, pp. 419-423, 4 figs., 3 pls., February, 1925.
17. The use of bakelite in the preservation of fossil material: Science, new ser., vol. 61, pp. 543-544, May 22, 1925.
18. A specimen of *Stelemys nebrascensis* Leidy, with the skull preserved: Michigan, Univ., Mus. Geology, Contr., vol. 2, no. 4, pp. 87-91, 7 figs., June 3, 1925.
19. Note on a new species of the Eocene crocodilian *Allognathosuchus*, *A. wartheni*: Michigan, Univ., Mus. Geology, Contr., vol. 2, no. 5, pp. 93-97, 1 fig., 1 pl., June 3, 1925.
20. Environment of tetrapod life in the late Paleozoic of regions other than North America: Carnegie Inst. Washington, Pub. no. 375, 211 pp., 23 figs., December, 1926.

Case, Ermine Cowles—Continued.

21. Genus *Coelophysis* in the upper Triassic beds of western Texas (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 227, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 3, pp. 235–236, April, 1927.
22. The vertebral column of *Coelophysis* Cope: Michigan, Univ., Mus. Geology, Contr., vol. 2, no. 10, pp. 209–222, 9 figs., 1 pl., August 3, 1927.
23. A new species of trionchid turtle, *Amyda nelsoni*, from the Eocene beds of southwestern Wyoming: Michigan, Univ., Mus. Geology, Contr., vol. 2, no. 11, pp. 223–226, 3 figs., 1 pl., August 3, 1927.
24. A complete phytosaur pelvis from the Triassic beds of western Texas: Michigan, Univ., Mus. Geology, Contr., vol. 2, no. 12, pp. 227–229, 1 pl., August 3, 1927.
25. The coral seas of Michigan: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 27, no. 5, pp. 420–429, 7 figs., September–October, 1927.
26. A cotylosaur from the upper Triassic of western Texas: Washington Acad. Sci., Jour., vol. 18, no. 7, pp. 177–178, 1 fig., April 4, 1928.
27. Indications of a cotylosaur and of a new form of fish from the Triassic beds of Texas, with remarks on the Shinarump conglomerate: Michigan, Univ., Mus. Paleontology, Contr., vol. 3, no. 1, pp. 1–14, 1 pl., November 10, 1928.

Case, J. B.

1. Report on Santa Fe Springs oil field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 8, no. 11, pp. 5–19, 4 pls. (incl. map), May, 1923.
2. (and Keyes, Robert L.). Report on the Long Beach oil field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 9, no. 4, pp. 5–17, 3 pls., October, 1923.
3. (and Wilhelm, V. H.). Report on Huntington Beach oil field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 9, no. 6, pp. 5–16, 5 pls. (incl. map), December, 1923.

Castello, Walter Owen. See also Boalich, 1.

1. The commercial minerals of California, with notes on their uses, distribution, properties, ores, field tests, and preparation for the market: California State Min. Bur., Bull. no. 87, 124 pp. January, 1920.

Cathcart, Stanley H. See also Ferguson, H. G., 6; Steidtmann, 4.

1. Mining in northwestern Alaska: U. S. Geol. Survey, Bull. 712, pp. 185–198, 5 figs., 1920.
2. Metalliferous lodes in southern Seward Peninsula, Alaska: U. S. Geol. Survey, Bulletin 722, pp. 163–261, 14 figs. (incl. sketch maps), 1922.
3. Mining in northwestern Alaska (U. S. Geol. Survey, Bull. 712, 1920) (abstract by R. W. Stone): Washington Acad. Sci., Jour., vol. 11, no. 15, p. 375, September 19, 1921.

Catherall, A. P.

1. [Petroleum developments in] British West Indies: Inst. Petroleum Technologists, Jour., vol. 13, no. 63, pp. 609–611, August, 1927.

Catlin, C. N.

1. Character of the ground-water resources of Arizona: Arizona, Univ., Coll. Agr., Agr. Exp. Sta., Bull. no. 114, pp. 173–293, March 1, 1920.

Cattell, R. A. See Bell, H. W., 1.

Cave, Harold Sergius. See also Prettyman, 1.

1. Historical sketch of the Geological Survey of Georgia; bibliography and other data: Georgia, Geol. Survey, Bull. no. 39, 154 pp., 7 pls., 2 figs. (incl. map), 1922.

Cavins, O. A. See also Böse, 8.

1. [Biographical sketch of Emil Böse]: Texas, Univ., Bull. no. 2748, pp. 5-6, December 22, 1927.

Cervantes, Enrique A.

1. La industria del azufre y localización de sus criaderos en los Estados Unidos Mexicanos: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 39, no. 9-12, pp. 575-582, December, 1921.
2. Industria y explotación de la mica: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 39, no. 9-12, pp. 583-595, December, 1921.

Chadbourn, Charles Henry.

1. Paragenesis of the ores of the Silver Islet mine, Thunder Bay region, Lake Superior: Econ. Geology, vol. 18, no. 1, pp. 77-82, 1 pl., January-February, 1923.

Chadwick, George Halcott. See also Galloway, 4; Parks, 14; Swartz, C. K., 10.

1. New species of coral [*Palaeophyllum*, Manitoulin Island]: Canada, Geol. Survey, Mem. 111, pp. 128-129, 1 fig. (on pl. 5), 1919.
2. A new eurypterid horizon (abstract): Geol. Soc. America, Bull., vol. 30, pp. 152-153, March 31, 1919.
3. Portage stratigraphy in western New York (abstract): Geol. Soc. America, Bull., vol. 30, p. 157, March 31, 1919.
4. Remarkable persistence of thin horizons (abstract): Geol. Soc. America, Bull., vol. 30, p. 157, March 31, 1919.
5. The Paleozoic rocks of the Canton quadrangle: New York State Mus., Bull. nos. 217, 218, 60 pp., 5 figs., 12 pls., map and sections, 1920.
6. Large fault in western New York: Geol. Soc. America, Bull., vol. 31, no. 1, pp. 117-120, 2 figs., March 31, 1920.
7. Devonian black shales of western New York (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 91, March 31, 1921.
8. Chemung stratigraphy in western New York (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, pp. 68-69, March 30, 1923.
9. Glacial lake problems: Geol. Soc. America, Bull., vol. 34, no. 3, pp. 499-506, 1 fig., September 30, 1923.
10. The stratigraphy of the Chemung group in western New York: New York State Mus. Bull. no. 251, pp. 149-157, 1 fig., 1924.
11. (and Dunbar, E. U.). Genesee glacial lakes: Geol. Soc. America, Bull., vol. 35, no. 3, pp. 669-676, September 30, 1924.
12. Chagrin formation of Ohio (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 99, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, pp. 148-149, March, 1924.
13. Kansas Permian unconformity (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 105, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 152, March, 1924.
14. Chagrin formation of Ohio: Geol. Soc. America, Bull., vol. 36, no. 3, pp. 455-464, 2 figs., September 30, 1925.
15. New points in New York stratigraphy (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 160, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, pp. 156-157, March, 1927.

Chadwick, George Halcott—Continued.

16. Adirondack eskers (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, p. 147, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 216, March 30, 1928.
17. Anorthosite outlier near Wells, New York (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 167–168, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 76, February, 1928.
18. Ice evacuation stages at Glens Falls, New York (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, p. 157, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 207–208, March 30, 1928.
19. Glacial striae topping Catskill Mountains, New York (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, p. 147, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 216, March 30, 1928.
20. Ice evacuation stages at Glens Falls, New York: *Geol. Soc. America, Bull.*, vol. 39, no. 4, pp. 901–922, 16 figs., December 30, 1928.
21. Adirondack eskers: *Geol. Soc. America, Bull.*, vol. 39, no. 4, pp. 923–929, 2 figs., December 30, 1928.

Chamberlain, Charles Joseph.

1. The origin of the cycads: *Science*, new ser., vol. 61, pp. 73–77, January 23, 1925.

Chamberlin, Rollin Thomas. See also Bateman, 5.

1. The building of the Colorado Rockies: *Jour. Geology*, vol. 27, nos. 3 and 4, pp. 145–164, 225–251, 13 figs., 1919.
2. A peculiar belt of oblique faulting: *Jour. Geology*, vol. 27, no. 8, pp. 602–613, 3 figs., November–December, 1919.
3. The American Association for the Advancement of Science; Section E—Geology and geography [St. Louis meeting, December, 1919]: *Science*, new ser., vol. 51, pp. 491–495, 518–523, May 14 and 21, 1920.
4. Some glacier studies in Alaska (abstract): *Science*, new ser., vol. 51, p. 521, May 21, 1920.
5. Vulcanism and mountain making; a supplementary note: *Jour. Geology*, vol. 29, no. 2, pp. 166–172, February–March, 1921.
6. Tutuila, Samoa, and the coral reef problem (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 28–29, March 31, 1921.
7. Diastrophism and the formative processes; XIV, Groundwork for the study of megadiastrophism; Part II, The intimations of shell deformation: *Jour. Geology*, vol. 29, no. 5, pp. 416–425, 1 fig., July–August, 1921.
8. On the crustal shortening of the Colorado Rockies: *Am. Jour. Sci.*, 5th ser., vol. 6, pp. 215–221, 3 figs. (incl. map), September, 1923.
9. (and Shepard, F. P.). Some experiments in folding: *Jour. Geology*, vol. 31, no. 6, pp. 490–512, 17 figs., September–October, 1923.
10. The significance of the framework of the continents: *Jour. Geology*, vol. 32, no. 7, pp. 545–574, 3 figs., October–November, 1924.
11. The wedge theory of diastrophism: *Jour. Geology*, vol. 33, no. 8, pp. 755–792, 14 figs., November–December, 1925.
12. The origin and early stages of the earth. In *The nature of the world and of man*, pp. 31–55, 3 figs., University of Chicago Press, 1926.
13. Earthquakes: *Kentucky Acad. Sci., Trans.*, vol. 2, pp. 155–164, 1927.
14. Whittling down the batholiths (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 109, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 65, February, 1927.

Chamberlin, Rollin Thomas—Continued.

15. Exploration of the Cariboo Mountains of British Columbia: Geog. Soc. Philadelphia, Bull., vol. 25, no. 2, pp. 59-76, 2 figs., 3 pls., April, 1927.
 16. (and Link, T. A.). The theory of laterally spreading batholiths: Jour. Geology, vol. 35, no. 4, pp. 319-352, 19 figs., May-June, 1927.
 17. Glacier motion as a type of rock deformation (abstract): Science, new ser., vol. 66, p. 461, November 11, 1927.
 18. Instrumental work on the nature of glacier motion: Jour. Geology, vol. 36, no. 1, pp. 1-30, 16 figs., January-February, 1928.
 19. The strain ellipsoid and Appalachian structures: Jour. Geology, vol. 36, no. 1, pp. 85-90, 3 figs., January-February, 1928.
 20. Some of the objections to Wegener's theory. In Theory of continental drift, pp. 83-87, Am. Assoc. Petroleum Geologists, 1928.
- Chamberlin, Thomas Chrowder, 1843-1928. See also Matsuyama, 1; Willis, B., 1.
1. Earth genesis: Illinois Acad. Sci., Trans., vol. 10, pp. 48-69 [1918].
 2. Study of fundamental problems of geology: Carnegie Inst., Washington, Year Book no. 17, 1918, pp. 297-298, February, 1919; no. 18, 1919, pp. 343-345, March, 1920.
 3. Investigation versus propagandism [age of Vero, Florida, deposits]: Jour. Geology, vol. 27, no. 5, pp. 305-338, July-August, 1919.
 4. Diastrophism and the formative processes; X, The order of magnitude of the shrinkage of the earth deduced from Mars, Venus, and the moon: Jour. Geology, vol. 28, no. 1, pp. 1-17, January-February, 1920.
 5. Diastrophism and the formative processes; XI, Selective segregation of material in the formation of the earth and its neighbors: Jour. Geology, vol. 28, no. 2, pp. 126-157, 2 pls., February-March, 1920.
 6. The mathematics of isostasy: Am. Jour. Sci., 4th ser., vol. 49, pp. 311-323, 1 fig., May, 1920.
 7. Diastrophism and the formative processes; XII, The physical phases of the planetary nuclei during their formative stages: Jour. Geology, vol. 28, no. 6, pp. 473-504, September-October, 1920.
 8. Diastrophism and the formative processes; XIII, The bearings of the size and rate of infall of planetesimals on the molten or solid state of the earth: Jour. Geology, vol. 28, no. 8, pp. 665-701, 1 fig., November-December, 1920.
 9. [The self-compression of the earth and related problems]: Carnegie Inst. Washington Year Book no. 19, pp. 366-383, January, 1921.
 10. Groundwork of the earth's diastrophism: Geol. Soc. America, Bull., vol. 32, no. 2, pp. 197-210, June 30, 1921.
 11. The greater earth: Geol. Soc. America, Bull., vol. 32, no. 2 pp. 211-226, 4 figs., June 30, 1921.
 12. Diastrophism and the formative processes; XIV, Groundwork for the study of megadiastrophism; Part I, Summary statement of the groundwork already laid: Jour. Geology, vol. 29, no. 5, pp. 391-415, July-August, 1921.
 13. Diastrophism and the formative processes; XV, the self-compression of the earth as a problem of energy: Jour. Geology, vol. 29, no. 8, pp. 679-700, November-December, 1921.
 14. Study of fundamental problems of geology: Carnegie Inst. Washington Year Book no. 20, 1921, pp. 412-425, February, 1922.

Chamberlin, Thomas Chrowder—Continued.

15. The age of the earth from the geological viewpoint: *Am. Philos. Soc., Proc.*, vol. 61, no. 4, pp. 247–271, 1922; *Smithsonian Inst., Ann. Rept.*, 1922, pp. 241–261, 1924.
16. Memorial editorial; Rollin D. Salisbury, August 17, 1858–August 15, 1922: *Jour. Geology*, vol. 30, no. 6, pp. 480–481, September–October, 1922.
17. Jones's criticism of Chamberlin's Groundwork for the study of megadiastrophism: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 253–273, October, 1922.
18. Study of fundamental problems of geology: *Carnegie Inst. Washington, Year Book* no. 21, 1922, pp. 359–365, January, 1923.
19. A venerable climatic fallacy: *Jour. Geology*, vol. 31, no. 3, pp. 179–191. April–May, 1923.
20. Significant ameliorations of present Arctic climates: *Jour. Geology*, vol. 31, no. 5, pp. 376–406, 2 figs., July–August, 1923.
21. Review of British (Terra Nova) Antarctic expedition, 1910–1913, glaciology, by C. S. Wright and R. E. Priestley, London, 1922: *Jour. Geology*, vol. 31, no. 6, pp. 513–524, September–October, 1923.
22. Biographical memoir Charles Richard Van Hise, 1857–1918: *Nat. Acad. Sci., Mem.*, vol. 17, pp. 143–151, portr., 1924.
23. Study of fundamental problems of geology: *Carnegie Inst. Washington, Year Book* no. 22, pp. 324–334, 1924.
24. Seventy-five years of American geology: *Science*, new ser., vol. 59, pp. 127–135, February 8, 1924.
25. Review of *Bau und Entstehung der Alpen*, by Leopold Kober: *Jour. Geology*, vol. 32, no. 2, pp. 168–171, February–March, 1924.
26. Review of The planetesimal hypothesis and the solar system, by Harry Fielding Reid: *Jour. Geology*, vol. 32, no. 3, pp. 242–262, 1 fig., April–May, 1924.
27. [Review of] The earth, its origin, history, and physical constitution, by Harold Jeffries: *Jour. Geology*, vol. 32, no. 8, pp. 696–716, 5 figs., November–December, 1924.
28. Study of fundamental problems of geology: *Carnegie Inst. Washington, Year Book* no. 23, pp. 270–282, 1 fig., December, 1924.
29. Study of fundamental problems in geology: *Carnegie Inst. Washington, Year Book* no. 24, pp. 344–345, December, 1925.
30. Study of fundamental problems of geology: *Carnegie Inst. Washington, Year Book* no. 25, 1925–26, pp. 372–387, December, 1926.
31. Certain phases of megatectonic geology: *Jour. Geology*, vol. 34, no. 1, pp. 1–28, January–February, 1926.
32. (and Salisbury, Rollin D.). College textbook of geology. Part I, Geologic processes and their results, rewritten and revised by Rollin T. Chamberlin and Paul MacClintock. ix, 377, xii pp., 334 figs. Part II, Historical geology. xi, 381–911, xiv pp., 274 figs. New York, Henry Holt and Company, 1927.
33. Intrageology—elastasy vs. isostasy: *Jour. Geology*, vol. 35, no. 1, pp. 89–94, January–February, 1927.
34. Working concepts appropriate to an earth of planetesimal origin (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 129–130, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 75, February, 1927.

Chamberlin, Thomas Chrowder—Continued.

35. The work of Walcott: *Jour. Geology*, vol. 35, no. 7, p. 670, October–November, 1927.
36. The work of Weller: *Jour. Geology*, vol. 35, no. 8, pp. 743–744, November–December, 1927.
37. Study of fundamental problems of geology: *Carnegie Inst. Washington, Year Book* no. 26, pp. 338–345, December, 1927.
38. The growth of the earth: First part, The planetesimal hypothesis; Second part, The successive stages of its growth as the sources of the different peculiarities of its present adult state: *Scientia*, Milan, Italy, vol. 42, nos. 9 and 10, pp. 117–127, 181–192 suppl. pp. 47–57, 81–91, 3 pls., 1927.
39. (and Moore, Raymond C.). Memorial of Stuart Weller: *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 116–126, portr., March 30, 1928.
40. Response [on receiving the Penrose medal]: *Geol. Soc. America, Bull.* vol. 39, no. 1, pp. 195–197, March 30, 1928.
41. The two solar families; the sun's children. 311 pp., 52 figs., Chicago, Ill., University of Chicago Press, September, 1928.
42. Certain fundamental problems of geology: *Carnegie Inst. Washington, Year Book* no. 27, 1927–28, pp. 362–363, December, 1928.

Chambers, A. R.

The salt deposits of Malagash, Nova Scotia: *Canadian Inst. Min. and Met., Monthly Bull.* no. 145, pp. 276–285, 4 figs., May, 1924; *Trans.*, vol. 27, pp. 248–257, 4 figs. [1925].

Champion, Milton M. See Hubbard, 7.

Chance, Henry Martyn. See also Bateman, 10.

1. (and Chance, T. M.). Low-sulphur coal in Pennsylvania: *Am. Inst. Min. and Met. Eng., Bull.* no. 152, pp. 1459–1468, August, 1919; *Trans.*, vol. 63, pp. 649–659, 1920.

Chaney, Ralph Works. See also Clements, 1, 2, 3.

1. The flora of the Eagle Creek formation [Washington and Oregon]: *Chicago, Univ., Walker Museum, Contr.*, vol. 2, no. 5, pp. 115–181, 22 pls., 3 figs., July, 1920.
2. Further discussion of the ecological composition of the Eagle Creek flora (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 222, March 31, 1920.
3. Preliminary notes on recent Tertiary collections in the west (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 137, March 31, 1921.
4. A fossil flora from the Puente formation of the Monterey group: *Am. Jour. Sci.*, 5th ser., vol. 2, pp. 90–92, August, 1921.
5. Flora of the Rancho La Brea [southern California] (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 204, March 31, 1922.
6. Notes on the flora of the Payette formation [Idaho and Oregon]: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 214–222, September, 1922. Abstract, *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 203–204, March 31, 1922.
7. Report of progress in paleobotanical research in the Tertiary of the West during the year 1922: *Carnegie Inst. Washington, Year Book* no. 21, pp. 400–401, January, 1923.
8. Paleobotanical contributions to the stratigraphy of central Oregon (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 129, March 30, 1923.
9. [Fossil floras of the John Day Basin]: *Carnegie Inst. Washington, Year Book* no. 22, pp. 349–350, 1924.

Chaney, Ralph Works—Continued.

10. Preliminary report on a Tertiary flora from northwestern Nevada (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 162-163, March 30, 1924.
11. Quantitative studies of the Bridge Creek flora: Am. Jour. Sci., 5th ser., vol. 8, pp. 127-144, 2 pls., August, 1924.
12. [Studies in paleobotany of Pacific region]: Carnegie Inst. Washington, Year Book no. 23, pp. 292-393, December, 1924.
13. Notes on the occurrence of terrestrial plant fossils in association with marine deposits in the western United States: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, p. 882 [1924].
14. A note on the intercontinental relationships of a Tertiary flora: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, p. 883 [1924].
15. Tertiary forests and climates in the Great Basin and Great Plains (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 218, March 30, 1925.
16. A comparative study of the Bridge Creek flora and the modern redwood forest: Carnegie Inst. Washington, Pub. no. 349 (Studies on the fossil flora and fauna of the western United States), pp. 1-22, 7 pls., August, 1925.
17. The Mascall flora; its distribution and climatic relation: Carnegie Inst. Washington, Pub. no. 349 (Studies on the fossil flora and fauna of the western United States), pp. 23-48, 1 fig., 1 pl., August, 1925.
18. Notes on two fossil hackberries from the Tertiary of the western United States: Carnegie Inst. Washington, Pub. no. 349 (Studies on the fossil flora and fauna of the western United States), pp. 49-56, 1 pl., August, 1925.
19. A record of the presence of *Umbellularia* in the Tertiary of the western United States: Carnegie Inst. Washington, Pub. no. 349 (Studies on the fossil flora and fauna of the western United States), pp. 57-62, 1 pl., August, 1925.
20. [Studies of the Tertiary floras of the western United States]: Carnegie Inst. Washington, Year Book, no. 24, pp. 356-357, December, 1925.
21. Relationships of the marine and fresh-water Tertiary of western North America, based on recent collections of fossil plants (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 213-214, March 30, 1926.
22. [Report on paleobotanic research]: Carnegie Inst. Washington, Year Book no. 25, 1925-6, pp. 339-402, December, 1926.
23. (and Mason, Herbert L.). Fossil plants [from asphalt deposits in Carpinteria, Santa Barbara County, California]: Science, new ser., vol. 66, pp. 156-157, August 12, 1927.
24. Geology and paleontology of the Crooked River Basin, with special reference to the Bridge Creek flora: Carnegie Inst. Washington, Pub. 346 (Contributions to Paleontology), pp. 45-138, 4 figs., 20 pls., October, 1927.
25. [Report on the investigation of fossil plants]: Carnegie Inst. Washington, Year Book no. 26, pp. 361-362, December, 1927.
26. Recent additions to the Pleistocene history of western California (abstract): Pan-Am. Geologist, vol. 49, no. 2, pp. 149-150, March 1928; Geol. Soc. America, Bull., vol. 39, no. 1, p. 221, March 30, 1928.
27. Distribution and correlation of Tertiary floras of the Great Basin (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 314, May, 1928.
28. [Investigations in paleobotany]: Carnegie Inst. Washington, Year Book no. 27, 1927-28, pp. 382-383, December, 1928.

Chang, M. S. See Ehlers, 10, 11.

Channing, John Parke.

1. A silverless islet [Silver Islet, Lake Superior]: *Eng. and Min. Jour.*, vol. 108, p. 232, August 9, 1919.

Chapin, Theodore. See also Burchard, 6.

1. The structure and stratigraphy of Gravina and Revillagigedo islands, Alaska (U. S. Geol. Survey, Prof. Paper 120, pp. 83-100, 1918) (abstract by R. W. Stone): *Washington Acad. Sci., Jour.*, vol. 9, no. 2, p. 49, January 19, 1919.
2. The Nelchina-Susitna region, Alaska (U. S. Geol. Survey, Bull. 668, 1918) (abstract by R. W. Stone): *Washington Acad. Sci., Jour.*, vol. 9, no. 11, p. 320, June 4, 1919.
3. Platinum-bearing auriferous gravels of Chistochina River [Alaska]: U. S. Geol. Survey, Bull. 692, pp. 137-141, 1 fig., 1919.
4. Mining in the Fairbanks district [Alaska]: U. S. Geol. Survey, Bull. 692, pp. 321-327, 1 fig., 1919. Abstract by G. C. Martin, *Washington Acad. Sci., Jour.*, vol. 9, no. 20, pp. 635-636, December 4, 1919.
5. A molybdenite lode on Healy River [Alaska]: U. S. Geol. Survey, Bull. 692, p. 329, 1919. Abstract by G. C. Martin, *Washington Acad. Sci., Jour.*, vol. 9, no. 20, p. 636, December 4, 1919.
6. Mining in the Hot Springs district [Alaska]: U. S. Geol. Survey, Bull. 692, pp. 331-335, 1919. Abstract by G. C. Martin, *Washington Acad. Sci., Jour.*, vol. 9, no. 20, p. 636, December 4, 1919.
7. Tin deposits of the Ruby district [Alaska]: U. S. Geol. Survey, Bull. 692, p. 337, 1919.
8. Mining developments in the Matanuska coal field [Alaska]: U. S. Geol. Survey, Bull. 712, pp. 131-167, 3 pls., 4 figs., 1920.
9. Lode developments in the Willow Creek district [Alaska]: U. S. Geol. Survey, Bull. 712, pp. 169-176, 1 fig., 1920.
10. Geology in the Matanuska coal field and the Willow Creek district, Alaska (U. S. Geol. Survey, Bull. 712, 1920) (abstract by R. W. Stone): *Washington Acad. Sci., Jour.*, vol. 11, no. 15, p. 375, September 19, 1921.
11. Mining developments in the Matanuska coal fields [Alaska]: U. S. Geol. Survey, Bull. 714, pp. 197-199, 1921.
12. Lode developments in the Willow Creek district [Alaska]: U. S. Geol. Survey, Bull. 714, pp. 201-206, 1 pl. (map), 1921.

Chapman, Lewis C.

1. The Hockley salt dome [Harris County, Texas]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 3, pp. 297-299, 1 fig., May-June, 1923.

Charles, B. E. See Bridge, 1.

Charles, Homer H.

1. Oil and gas resources of Kansas; Anderson County: *Kansas, State Geol. Survey, Bull.* 6, pt. 7 (*Kansas, Univ., Bull.*, vol. 28, no. 12), 95 pp., 13 figs., 9 pls. (maps and sections), June 15, 1927.

Chase, Charles A.

1. The Aztec mine, Baldy, New Mexico: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1193, 12 pp., October, 1922. Abstract, *Mining and Metallurgy*, no. 190, pp. 33-35, 1 fig., October, 1922.

Chase, R. L.

1. The oil shale industry in Colorado: Min. and Sci. Press, vol. 118, p. 82, 1 fig., January 18, 1919.

Cheney, Charles A.

1. Salt domes of northeastern Texas: Oil and Gas Jour., vol. 20, no. 32, pp. 82-83, January 6, 1922. Review by K. C. Heald, Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 1, pp. 58-59, January-February, 1922.

Cheney, M. G.

1. South Bend field, Young County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 4, pp. 503-504, July-August, 1921.

Chittenden, Russell H.

1. Biographical memoir of Horace Lemuel Wells, 1855-1924: Nat. Acad. Sci., Biog. Mem., vol. 12, mem. 4, 15 pp., portr., 1928.

Christensen, H. P.

1. Mineral industries of Illinois [map]. Scale 1:500,000. Illinois State Geol. Survey, 1920.
2. Directory of Illinois mineral operators; to accompany mineral industries map; September 1, 1920. Illinois State Geol. Survey, 1921.

Christie, M. G.

1. Geology as an aid to air navigation: Aviation, vol. 14, no. 23, pp. 609-611, June 4, 1923.

Christner, Drue DeGarmo. See also Beede, 10, 11.

1. (and Wheeler, O. C.). The geology of Terrell County: Texas Univ., Bull. no. 1819, pp. 1-32, 8 pls. (incl. map), April 1, 1918.

Church, C. C. See also Hanna, G. D., 37.

1. A new species of *Bolivinita* from the lower Pliocene of California: Jour. Paleontology, vol. 1, no. 4, pp. 265-268, 1 fig., January, 1928.

Churchill, Frederick C.

1. An abandoned marine sand bar in the Cornwallis Valley, Nova Scotia: Nova Scotian Inst. Sci., Proc. and Trans., vol. 15, pt. 1, pp. 65-69, 1 fig., January 1, 1922.
2. Evidence of elevation of the sea coast as shown by fossil deltas near Wolfville, N. S.: Nova Scotian Inst. Sci., Proc. and Trans., vol. 15, pt. 3, pp. 137-140, November 1, 1923.
3. Probable change in drainage of the Black and Gaspereau rivers, Kings County, Nova Scotia; Nova Scotian Inst. Sci., Proc. and Trans., vol. 15, pt. 3, pp. 141-144, November 1, 1923.
4. The effects of glaciation in the vicinity of Wolfville, Nova Scotia: Nova Scotian Inst. Sci., Trans., vol. 15, pt. 4, pp. 161-163, November 1, 1923.
5. Recent changes in the coast line in the County of Kings, Nova Scotia: Nova Scotian Inst. Sci., Proc. and Trans., vol. 16, pp. 84-86, November 21, 1927.

Clapp, Charles Horace. See also Wilson, R. A., 5.

1. Geology of the igneous rocks of Essex County, Massachusetts: U. S. Geol. Survey, Bull. 704, 132 pp., 4 figs., 18 pls. (incl. maps), 1921. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 11, no. 19, p. 470, November 19, 1921.

Clapp, Charles Horace—Continued.

2. (and Bevan, Arthur, and Lambert, G. S.). Geology and oil and gas prospects of central and eastern Montana: Montana, Univ., Bull., Bur. Mines and Met. ser., no. 4, 95 pp., 9 pls. (incl. maps), State School of Mines, June, 1921.

Clapp, Frederick Gardner. See also Hager, 5; Matteson, 2.

1. Geology of Cement oil field [Caddo County, Oklahoma]: Am. Inst. Min. and Met. Eng., Trans., vol. 65, pp. 156-164, 1 fig., 1921. Abstract, Mining and Metallurgy, no. 158, pp. 34-35, February, 1920.
2. The occurrence of petroleum. In Day, David T., A handbook of the petroleum industry, vol. 1, pp. 1-166, 62 figs., 1922.
3. Oil pools in flat arches in Montana: Pan-Am. Geologist, vol. 38, no. 1, pp. 92-94, August, 1922.
4. The Teapot Dome naval reserve no. 3, Wyoming: Oil Trade Jour., vol. 15, no. 3, pp. 31-35, 5 figs., March, no. 4, pp. 38-39, 92, 1 fig., April, no. 5, pp. 58, 60, 62, 84-85, 5 figs., May, no. 6, pp. 58, 60, 62, 90, 3 figs., June, 1924.
5. Some essentials for successful oil development: New Zealand Mining Congress, Dunedin Meeting, Proc., pp. 63-78, 1926; Eng. and Min. Jour., vol. 122, no. 15, pp. 571-576, October 9, 1926.
6. Fundamental criteria for oil occurrence: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 7, pp. 683-703, July, 1927; Oil Weekly, vol. 45, no. 12, pp. 35-38, June 10, no. 13, pp. 43-44, 94, 96, 98, June 17, 1927.
7. The present stage of oil geology: Petroleum Times, vol. 18, pp. 139-140, 211-212, 285-286, July 16, 30, August 6, 1927. Estado actual de la geología petrolera: Bol. Petroleo, vol. 26, no. 2, pp. 177-180, August 1928.

Clapp, L. R.

1. Notes on Anyox [British Columbia] mining and metallurgical practice: Canadian Inst. Min. and Met., Monthly Bull., no. 140, pp. 682-700, December, 1923.
2. Making copper 600 miles north of Vancouver [Anyox, British Columbia]: Eng. and Min. Jour.-Press, vol. 116, no. 25, pp. 1067-1075, 10 figs., December 22, 1923.

Clark, Albert F.

1. (and Newton, Roy F.). Utah hydrocarbons: Utah, Univ., Bull., vol. 15, no. 2, (Eng. Exper. Sta., Bull. no. 15), pp. 33-46, January, 1925.

Clark, Austin Hobart.

1. A comparative study of the most ancient and the recent marine faunas: Washington Acad. Sci., Jour., vol. 14, no. 21, pp. 487-491, December 19, 1924.

Clark, Bruce Lawrence.

1. Eocene divisions of California (abstract): Geol. Soc. America, Bull., vol. 30, no. 1, p. 154, March 31, 1919.
2. The stratigraphic and faunal relationships of the Meganos group, middle Eocene of California: Jour. Geology, vol. 29, no. 2, pp. 125-165, 9 figs., February-March, 1921; abstract with discussion, Geol. Soc. America, Bull., vol. 31, no. 1, pp. 192-193, March 31, 1920.
3. Paleogeography and correlation of the marine Tertiary deposits of the west coast (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 90, March 31, 1921.

Clark, Bruce Lawrence—Continued.

4. Correlation of the Tertiary marine formations of the West Coast of North America: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 3, pp. 801-818, 1921.
5. The marine Tertiary of the West Coast of the United States; its sequence, paleogeography, and the problems of correlation: Jour. Geology, vol. 29, no. 7, pp. 583-614, 12 figs., October-November, 1921.
6. A new family and new genus from the Tertiary of the Pacific coast: California, Univ., Pub., Dept. Geol. Sciences, Bull., vol. 14, no. 4, pp. 115-122, 2 pls., September 7, 1922.
7. Revision of the *Rimella*-like gastropods from the west coast of North America: California, Univ., Dept. Geol. Sci., Bull., vol. 14, no. 7, pp. 277-288, 1 pl., October 31, 1923.
8. (and Arnold, Ralph). Fauna of the Sooke formation, Vancouver Island, with description of a new coral by T. Wayland Vaughan: California, Univ., Dept. Geol. Sci., Bull., vol. 14, no. 5, pp. 123-234, 28 pls., November 6, 1923.
9. A summary of work in progress on the Tertiary and Quaternary of western North America: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, pp. 874-879 [1924].
10. Thrust faulting in the region of Mount Diablo [California]: Min. and Oil Bull., vol. 10, no. 11, pp. 1133, 1181, 1200, November, 1924.
11. Pelecypoda from the marine Oligocene of western North America: California, Univ., Dept. Geol. Sci., Bull., vol. 15, no. 4, pp. 69-136, 15 pls., January 5, 1925.
12. Thrust faulting in the Mount Diablo region of middle California (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 152, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 150, March, 1925.
13. Preliminary report on the geology of Mount Diablo [California] (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, pp. 205-206, March 30, 1925.
14. (and Stewart, Ralph B.). Domengine horizon (middle Eocene), a newly recognized division in the Eocene of California (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 227, March 30, 1925.
15. Preliminary study of geology of Mount Diablo and Byron regions, California (abstract): Pan-Am. Geologist, vol. 43, no. 5, p. 378, June, 1925.
16. The Domengine horizon, middle Eocene of California: California, Univ., Dept. Geol. Sci., Bull., vol. 16, no. 5, pp. 99-118, 1 fig., November 4, 1926.
17. Studies in the tectonics of the coast ranges of California (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 163, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 158, March, 1927.
18. (and Woodford, A. O.). The geology and paleontology of the type section of the Meganos formation (lower middle Eocene) of California: California, Univ. Dept. Geol. Sci., Bull., vol. 17, no. 2, pp. 63-142, 10 pls. (incl. map), December 31, 1927.
19. Tectonics of the Valle Grande [California] (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 304, May, 1928.

Clark, C. R.

1. (and Bell, A. H.). Oil field operations in Illinois during the first quarter of 1927: Illinois, State Geol. Survey, Press Bull. ser., Illinois Petroleum no. 8, pp. 8-12, April 16, 1927.

Clark, Clifton Wirt.

1. Lower and Middle Cambrian formations of the Mohave Desert: California, Univ., Dept. Geol. Sci., Bull., vol. 13, no. 1, pp. 1-7, December 20, 1921.
2. Geology and ore deposits of the Santa Fe district, Mineral County, Nevada: California, Univ., Dept. Geol. Sci., Bull., vol. 14, no. 1, pp. 1-74, 4 figs., 6 pls. (incl. map), September 7, 1922.

Clark, F. B. [R.?]. See Redwood, 1.

Clark, F. L.

1. Coal balls, the "finger prints" that identify coal: Coal Age, vol. 26, no. 19, pp. 656-657, 5 figs., November 6, 1924.

Clark, Frank R. See also Redwood, 1.

1. Geology of the Lost Creek coal field, Morgan County, Utah (U. S. Geol. Survey, Bull. 691, pp. 311-322, 1918) (abstract by R. W. Stone): Washington Acad. Sci., Jour., vol. 9, no. 11, pp. 318-319, June 4, 1919.
2. The Farnham anticline, Carbon County, Utah: U. S. Geol. Survey, Bull. 711, pp. 1-13, 2 pls. (incl. map), 1 fig., July 3, 1919. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 9, no. 20, p. 638, December 4, 1919.
3. Notes on the Kevin-Sunburst oil field, Montana: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 3, pp. 263-276, 1 fig., May-June, 1923.
4. Economic geology of the Castlegate, Wellington, and Sunnyside quadrangles, Carbon County, Utah: U. S. Geol. Survey, Bull. 793, 165 pp., 3 figs., 22 pls. (incl. map), 1928.

Clark, George Huntington.

1. Mica deposits of Alabama: Alabama, Geol. Survey, Bull. no. 24, 115 pp., 10 figs., 1921.
2. Rock asphalts of Alabama and their use in paving: Alabama, Geol. Survey, Special Rept. no. 13, 96 pp., 14 pls., 1925.

Clark, Glenn C. See also Aurin, 2.

1. (and Aurin, F. L.). The Tonkawa [oil] field, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 3, pp. 269-283, 7 figs., 1 pl., May-June, 1924.
2. Wilcox sand production, Tonkawa field, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 9, pp. 885-891, 4 figs., 2 pls., September, 1926.
3. (and Cooper, C. L.). Oil and gas geology of Kay, Grant, Garfield, and Noble counties: Oklahoma Geol. Survey, Bull. no. 40-H, 44 pp., 11 figs. and 6 pls. (incl. maps), March, 1927.

Clark, Hubert Lyman. See Arnold, B. W., 1.

Clark, J. M. See Whorton, 1.

Clark, Karl Adolf.

1. The McMurray tar sands [northern Alberta]: Canadian Min. Jour., vol. 42, no. 48, pp. 943-944, December 2, 1921.
2. The bituminous sand and its commercial development: Alberta, Scientific and Industrial Research Council, 2d Ann. Rept., pp. 43-59, 2 figs., 1922.

Clark, Karl Adolf—Continued.

3. The bituminous sands of northern Alberta: Alberta, Sci. and Industrial Research Council, Third Ann. Rept., pp. 42-58, 1923.
4. (and Blair, S. M.). The bituminous sands of northern Alberta: Alberta, Scientific and Industrial Research Council, 5th Ann. Rept. (Rept. no. 12), pp. 46-65, 3 figs., 1925.
5. (and Blair, S. M.). The bituminous sands of Alberta: Alberta, Sci. and Ind. Research Council, Rept. no. 18, 74 pp., 3 figs., 7 pls., 2 maps, 1927.

Clark, Robert Watson.

1. (and Bauer, C. Max). Notes on geology of the Okmulgee district [Oklahoma]: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 2, pp. 282-292, 1 fig. (map), March-April, 1921.
2. Oil and gas in Oklahoma; Geology and oil and gas development in Okmulgee County, Oklahoma: Oklahoma Geol. Survey, Bull. no. 40-F, 28 pp., 6 figs., map, December, 1926.
3. Origin of folding in Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 2, p. 199, February, 1927.
4. Oil and gas in Oklahoma; geology of McIntosh County: Oklahoma Geol. Survey, Bull. no. 40-W, 14 pp., 1 fig., 4 pls., January, 1928.

Clark, Stuart K.

1. Thomas oil field, Kay County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 7, pp. 643-655, 7 figs., July, 1926.
2. (and Daniels, James I., and Richards, J. T.). Logging rotary wells from drill cuttings: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 1, pp. 59-76, 4 figs., January, 1928.
3. Faulting in Thomas field, Kay County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 7, pp. 769-772, July, 1928.

Clark, Thomas Henry. See also Sayles, 14.

1. A section in the Trenton limestone at Martinsburg, New York: Harvard Coll., Mus. Comp. Zool., Bull. vol. 63, no. 1, pp. 1-18, 1 pl., May, 1919.
2. A new agelacrinitid from the Chazy of New York: Am. Jour. Sci., 4th ser., vol. 50, pp. 69-71, 1 fig., July, 1920.
3. The origin of graphite: Econ. Geology, vol. 16, no. 3, pp. 167-183, April-May, 1921.
4. A review of the evidence for the Taconic revolution: Boston Soc. Nat. Hist., Proc., vol. 36, no. 3, pp. 135-163, July, 1921.
5. Nature of *Salterella* (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 196-197, March 31, 1922.
6. Devonian limestone at St. George, Quebec (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 201, March 31, 1922.
7. A new trilobite appendage: Am. Jour. Sci., 5th ser., vol. 4, pp. 245-248, 1 fig., September, 1922.
8. Geology of Levis, Quebec (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 101, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 150, March, 1924.
9. The Devonian limestone at St. George, Quebec: Jour. Geology, vol. 31, no. 3, pp. 217-225, 1 fig. (paleogeographic map), April-May, 1923.
10. New fossils from the vicinity of Boston: Boston Soc. Nat. Hist., Proc., vol. 36, no. 8, pp. 473-485, 2 figs., August, 1923.

Clark, Thomas Henry—Continued.

11. The paleontology of the Beekmantown series at Levis, Quebec: Bull. Am. Paleontology, vol. 10, no. 41, 135 pp., 9 pls., June 25, 1924.
12. On the nature of *Salterella*: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 19, sec. 4, pp. 29-41, 2 pls., 1925.
13. The structure of the Levis formation at Levis, Quebec: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, pt. 2, sec. 4, pp. 169-180, 3 figs., 1 pl. (map), 1926.
14. The graptolites of the Glenogle formation [British Columbia]: Canadian Field-Naturalist, vol. 40, no. 6, pp. 136-137, September, 1926.
15. A fossil bison skull from Yukon Territory: Canadian Field-Naturalist, vol. 41, no. 3, pp. 45-47, 2 figs., March, 1927.
16. A new cephalopod from the Trenton limestone of Montreal: Canadian Field-Naturalist, vol. 42, no. 8, pp. 187-189, 1 fig., November, 1928.

Clark, William Otterbein.

1. (and Riddell, C. W.). Exploratory drilling for water and use of ground water for irrigation in Steptoe Valley, Nevada; with an introduction by O. E. Meinzer: U. S. Geol. Survey, Water-Supply Paper 467, 70 pp., 6 figs., 6 pls. (incl. maps), 1920; abstract, Washington Acad. Sci., Jour., vol. 11, no. 18, p. 442, November 4, 1921.
2. Ground water in Santa Clara Valley, California; U. S. Geol. Survey, Water-Supply Paper 519, 209 pp., 20 figs., 19 pls. (incl. maps), 1924.

Clarke, F. B.

1. A review of Montana [oil] developments: Oil and Gas Jour., vol. 20, no. 33, pp. 62-64, January 13, 1922.

Clarke, Frank Wigglesworth.

1. The data of geochemistry (fourth edition): U. S. Geol. Survey, Bull. 695, 832 pp., 1920.
2. (and Wheeler, Walter Calhoun). The inorganic constituents of marine invertebrates (second edition, revised and enlarged): U. S. Geol. Survey, Prof. Paper 124, 62 pp., 1922.
3. (and Washington, H. S.). The average chemical composition of igneous rocks: Nat. Acad. Sci., Proc., vol. 8, no. 5, pp. 108-115, May, 1922.
4. (and Washington, Henry Stephens). The composition of the earth's crust: U. S. Geol. Survey, Prof. Paper 127, 117 pp., 28 tables, 1924.
5. The data of geochemistry (fifth edition): U. S. Geol. Survey, Bull. 770, 841 pp., 1924.
6. The evolution and disintegration of matter: U. S. Geol. Survey, Prof. Paper 132, pp. 51-86, 1 pl., April 9, 1924.
7. The composition of the river and lake waters of the United States: U. S. Geol. Survey, Prof. Paper 135, 199 pp., 1924.
8. Mineralogical work [of Joseph Leidy]: Acad. Nat. Sci. Philadelphia, Proc., vol. 75 [Appendix], The Joseph Leidy Commemorative Meeting, pp. 49-52, 1924.
9. The internal heat of the earth: Sci. Am., vol. 134, pp. 370-371, 6 figs., June, 1926.
10. The significance of meteorites: Sci. Am., vol. 138, no. 5, pp. 430-431, 4 figs., May, 1928.

Clarke, John Mason, 1857-1925.

1. Fourteenth report of the director of the State Museum and Science Department, including the seventy-first report of the State Museum, the thirty-seventh report of the State geologist, and the report of the State paleontologist for 1917: New York State Mus. Bull., nos. 207, 208 (March-April, 1918), 211 pp., illus., 1919.
2. Geological map of the Peninsula of Percé, P. Q., and its islands: New York State Mus. Bull. nos. 207, 208 (March-April, 1918), p. 147, map, 1919.
3. Biographical memoir of William Bullock Clark, 1860-1917: Nat. Acad. Sci., Biog. Mem., vol. 9, pp. 3-18, portr., May, 1919.
4. *Bunaia woodwardi*, a new merostome from the Silurian waterlimes of New York: Geol. Mag., new ser., dec. 6, vol. 6, pp. 531-532, 1 pl., December, 1919.
5. Fifteenth report of the director of the State Museum and Science Department, including the seventy-second report of the State Museum, the thirty-eighth report of the State geologist, and the report of the State paleontologist for 1918: New York State Mus. Bull. nos. 219, 220, 309 pp., pls., 1920.
6. Postbellum reflections on the place of paleontology among the sciences: New York State Mus. Bull. nos. 219, 220, pp. 123-128, 1920.
7. New Paleozoic crustaceans, I; *Bunaia*, a new merostome crustacean, from the New York Silurian waterlimes: New York State Mus. Bull. nos. 219, 220, pp. 128-134, 1 pl., 1920.
8. *Armstrongia*, a new genus of Devonian glass sponges: New York State Mus. Bull. nos. 219, 220, pp. 143-146, 1 pl., 1920.
9. The microscopic fauna of the Bonaventure conglomerate: New York State Mus. Bull. nos. 219, 220, pp. 147-148, 1920.
10. The great glass-sponge colonies of the Devonian; their origin, rise, and disappearance: Jour. Geology, vol. 28, no. 1, pp. 25-37, 19 figs., January-February, 1920.
11. (and Matthew, W. D.). Supposed fossil horse from the late Pleistocene found at Monroe, Orange County, New York (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 204, March 31, 1920.
12. A great American geologist of the last century, Professor James Hall (1811-1898): Geol. Mag., vol. 57, pp. 483-486, portr., November, 1920.
13. James Hall, of Albany, geologist and paleontologist, 1811-1898. 565 pp., 14 pls. (incl. portr.), Albany, 1921.
14. The oldest of the forests [upper Devonian tree trunks, Schoharie Creek, Catskill Mountains, New York]: Scient. Monthly, vol. 12, no. 1, pp. 83-91, 4 pls., January, 1921.
15. (and Smyth, C. H., jr., and Ruedemann, R.). Henry Platt Cushing: Science, new ser., vol. 53, pp. 510-512, June 3, 1921.
16. Organic dependence and disease; their origin and significance: New York State Mus. Bull., nos. 221, 222, 113 pp., 105 figs., 1921 (also New Haven, Yale University Press, 1921).
17. Sixteenth report of the director of the State Museum and Science Department, including the seventy-third report of the State Museum, the thirty-ninth report of the State geologist, and the report of the State paleontologist for 1919: New York State Mus. Bull. nos. 227, 228, 146 pp., 1921.

Clarke, John Mason—Continued.

18. Seventeenth report of the director of the State Museum and Science Department, including the seventy-fourth report of the State Museum, the fortieth report of the State geologist, and the report of the State paleontologist for 1920-21: New York State Mus., Bull. nos. 239-240, 209 pp., 12 figs., 17 pls., 1922.
19. The age of the earth from the paleontological viewpoint: Am. Philos. Soc., Proc., vol. 61, no. 4, pp. 272-282, 1922; Smithsonian Inst., Ann. Rept., 1922, pp. 261-269, 1924; abstract, Science, new ser., vol. 55, pp. 655-656, June 16, 1922.
20. L'Île Percée, the finial of the St. Lawrence . . . 203 pp., illus., New Haven, Yale University Press, 1923.
21. Boom Beach (Isle-au-Haut, Maine); a sea mill (abstract with discussion by C. K. Wentworth and C. O. Dunbar): Geol. Soc. America, Bull., vol. 34, no. 1, p. 65, March 30, 1923.
22. The Burton dictyosponge (abstract); Restoration of the Cohoes mastodon (abstract); Pyorrhoea in the Cohoes mastodon (abstract); Temple Hill mastodon (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, pp. 127-128, March 30, 1923.
23. Eighteenth report of the director of the State Museum and Science Department: New York State Mus. Bull. no. 251, 192 pp., illus., 1924.
24. A hemiaspidan crustacean from the New York Silurian waterlimes: New York State Mus. Bull. no. 251, pp. 119-120, 2 figs., 3 pls., 1924.
25. A colossal Devonian glass sponge: New York State Mus. Bull., no. 251, pp. 121-122, 2 pls., 1924.
26. The geological age of the Bonaventure formation: New York State Mus. Bull. no. 251, pp. 123-127, 5 figs., 1924.
27. Rosetted trails of the Paleozoic: New York State Mus. Bull. no. 251, pp. 128-130, 1 fig., 1 pl., 1924.
28. Nineteenth report of the director of the State Museum and Science Department: New York State Mus. Bull. no. 253, pp. 7-25, July, 1924.
29. D. Dana Luther, miller and geologist, 1840-1923: New York State Mus. Bull. no. 253, pp. 117-120, portr., July, 1924.
30. Twentieth report of the director of the State Museum and Science Department: New York State Mus. Bull., no. 260, pp. 7-46, illus., 1925.
31. The age of the earth: World Almanac and Book of Facts, 1926, p. 87, New York, New York World, 1926.

Clarke, Noah T. See also Bishop, 2.

1. The reconstruction of the Sterlingbush calcite cave: New York State Mus. Bull. nos. 219, 220, pp. 223-226, 1 pl., 1920.
2. Method of restoring the Cohoes mastodon: New York State Mus. Bull. no. 251, pp. 131-133, 2 pls., 1924.

Clawson, W. W., jr.

1. Oil and gas geology of Coal and Pittsburg Counties: Oklahoma Geol. Survey, Bull. 40-JJ, 16 pp., 2 figs., 2 pls. (maps), November, 1928.

Claypool, C. B.

1. (and Howard, W. V.). Method of examining calcareous well cuttings: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 12, pp. 1147-1152, December, 1928.

Cleland, Herdman Fitzgerald.

1. Memorial of Henry Shaler Williams: Geol. Soc. America, Bull., vol. 30, pp. 47-65, portr., March 31, 1919.

Cleland, Herdman Fitzgerald—Continued.

2. Practical applications of geology and physiography for use in the laboratory and class room, 69 pp., 50 figs., Excelsior Press, North Adams, Massachusetts, 1920.
3. The teaching of historical geology: Geol. Soc. America, Bull., vol. 31, no. 3, pp. 375–382, September 30, 1920.
4. The sixteenth annual New England intercollegiate geological excursion: Science, new ser., vol. 52, pp. 458–459, November 12, 1920.
5. A Pleistocene peneplain in the Coastal Plain: Jour. Geology, vol. 28, no. 8, pp. 702–706, November–December, 1920.
6. Demonstration material in geology (with discussion by W. M. Davis): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 56–85, 15 figs., March 31, 1922.
7. Weathering under constant conditions: Science, new ser., vol. 56, pp. 660–661, December 8, 1922.
8. Geology, physical and historical. 718 pp., 588 figs., New York, American Book Company [1925].

Clements, Frederic Edward.

1. (and Chaney, R. W.). Researches in sedimentation: Carnegie Inst. Washington, Year Book no. 21, 1922, p. 356, January, 1923.
2. (and Chaney, R. W.). Methods and principles in paleoecology: Carnegie Inst. Washington, Year Book no. 22, p. 319, 1924.
3. (and Chaney, R. W.). Principles and methods in paleoecology: Carnegie Inst. Washington, Year Book no. 25, 1925–26, pp. 370–371, December, 1926.

Clench, William J.

1. Description of a new species of *Physa* from the Pleistocene of Florida: Michigan, Univ., Mus. Zool., Occ. Papers, no. 164, 4 pp., 1 pl., August 3, 1925.

Clifton, R. L. See also Wheeler, 1.

1. Oil and gas in Oklahoma; Woods, Alfalfa, Harper, Major, Woodward, and Ellis counties: Oklahoma Geol. Survey, Bull. no. 40–A, 24 pp., 5 pls. (incl. map), June, 1926.
2. Stratigraphy of Whitehorse sandstone; formation extends from Clarke County, Kansas, through Oklahoma and into Panhandle area of Texas: Oil and Gas Jour., vol. 25, no. 2, pp. 70, 74, map, June 3, 1926.
3. Preliminary report on the Comanchean of northwestern Oklahoma: Oklahoma Acad. Sci., Proc., vol. 5, 1925 (Oklahoma, Univ., Bull., new ser. no. 330, Univ. Studies no. 22), pp. 128–131, April 1, 1926.
4. Correlation of the Whitehorse sandstone: Oklahoma Acad. Sci., Proc., vol. 5, 1925 (Oklahoma, Univ., Bull., new ser. no. 330, Univ. Studies no. 22), pp. 152–155, April 1, 1926.
5. Oil and gas in Oklahoma; geology of Harmon, Greer, Jackson, and Tillman Counties: Oklahoma Geol. Survey, Bull. no. 40–Y, 24 pp., 1 fig., 1 pl. (map), January, 1928.

Clinton, H. G. See also Foshag, 30.

1. Some rare minerals from Nevada: Rocks and Minerals, vol. 2, no. 1, pp. 34–35, March, 1927.

Cloos, Hans.

1. (and Balk, R.). Primary structure of Sierra Nevada intrusive in a cross-section from Yosemite Valley to Mono Lake, California (abstract) : Geol. Soc. America, Bull., vol. 39, no. 1, p. 185, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 142, March, 1928.

Cloud, W. F. See George, H. C.

Clute, Walker S.

1. Notes on the geology of Olinda field, California: Oil Bull., vol. 12, no. 9, pp. 954-955, 2 figs., September, 1926.

Cobb, Collier.

1. Physiographic processes in relation to harbor development and harbor maintenance: Elisha Mitchell Sci. Soc., Jour., vol. 38, nos. 1-2, pp. 21-23, September, 1922.
2. Permian fossils from the base of the North Carolina Newark (abstract) : Elisha Mitchell Sci. Soc., Jour., vol. 29, nos. 1-2, pp. 30-31, August, 1923.
3. The immediate ancestor of our domestic horse found fossil in Halifax County, North Carolina (abstract) : Elisha Mitchell Sci. Soc., Jour., vol. 29, nos. 1-2, pp. 31-32, August, 1923.
4. Our changing environment in North Carolina (abstract) : Elisha Mitchell Sci. Soc., Jour., vol. 43, nos. 1-2, p. 13, December, 1927.
5. A sperm whale from the Miocene(?) of Florida (abstract) : Elisha Mitchell Sci. Soc., Jour., vol. 43, nos. 1-2, pp. 23-24, December, 1927.

Cobb, Margaret Cameron. See also Ambronn, 1.

1. The origin of corundum associated with dunite in western North Carolina. Dissertation, Bryn Mawr College, 43 pp., 7 pls., map, Bryn Mawr, Pennsylvania, 1924.
2. Desilicative genesis of commercial corundum: Pan-Am. Geologist, vol. 43, no. 4, pp. 257-264, May, 1925.

Cobb, W. B.

1. Soil age and its possible significance in geology (abstract) : Elisha Mitchell Sci. Soc., Jour., vol. 44, no. 1, pp. 17-18, September, 1928.

Cockburn, A. M.

1. Some geological notes on the volcanoes of Hawaii (abstract) : Geol. Mag., vol. 64, p. 187, April, 1927.

Cockerell, Theodore Dru Alison. See also Northrop, S. A., 1.

1. Some American Cretaceous fish scales; with notes on the classification and distribution of Cretaceous fishes (preface by T. W. Stanton) : U. S. Geol. Survey, Prof. Paper 120, pp. 165-202, 7 pls., 1919. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 9, no. 15, pp. 440-441, September 19, 1919.
2. Eocene insects from the Rocky Mountains: U. S. Nat. Mus., Proc., vol. 57, pp. 233-260, 5 pls., 11 figs., 1920.
3. The oldest mosquitoes [*Culex winchesteri*, western Colorado] : Nature, vol. 103, p. 44, March 20, 1919.
4. Some fossil parasitic Hymenoptera: Am. Jour. Sci., 4th ser., vol. 47, pp. 376-380, 6 figs., May, 1919.
5. *Glossina* and the extinction of Tertiary mammals: Nature, vol. 103, p. 265, June 5, 1919.

Cockerell, Theodore Dru Alison—Continued.

6. Zoology [chapter 20, pp. 157–163, Florissant, Colorado, fossils]. 558 pp., illus., New York, World Book Co., 1920.
7. Biographical memoir of Alpheus Spring Packard, 1839–1905: Nat. Acad. Sci., Biog. Mem., vol. 9, pp. 181–236, portr., February, 1920.
8. Some Eocene insects from Colorado and Wyoming: U. S. Nat. Mus., Proc., vol. 59, pp. 29–39, 9 figs., 1 pl., 1921.
9. (and Sandhouse, Grace). Some Eocene insects of the family Fulgoridae: U. S. Nat. Mus., Proc., vol. 59, pp. 455–457, 1 pl., 1921.
10. The earliest bees, wasps, and ants: Science, new ser., vol. 54, pp. 154–155, August 19, 1921.
11. A fossil buttercup [*Ranunculus florissantensis* from Miocene of Florissant, Colorado]: Nature, vol. 109, pp. 42–43, 1 fig., January 12, 1922.
12. The fossil sawflies of Florissant, Colorado: Entomologist, vol. 55, pp. 49–50, March, 1922.
13. A fossil moth from Florissant, Colorado: Am. Mus. Novitates, no. 34, 2 pp., 1 fig., March 29, 1922.
14. A new genus of fossil Liliaceae [*Brachyruscus*, Florissant, Colorado]: Torrey Bot. Club, Bull., vol. 49, no. 7, pp. 211–213, 1 fig., July, 1922.
15. An ancient wasp [*Hoplissus archorytes*, Bear Gulch, Green River formation, Colorado]: Nature, vol. 110, p. 313, September 2, 1922.
16. A fossil cichlid fish from the Republic of Haiti: U. S. Nat. Mus., Proc., vol. 63, art. 7, 2 pp., 1 pl., 1923.
17. The supposed plumage of the Eocene bird *Diatryma*: Am. Mus. Novitates, no. 62, 4 pp., 2 figs., March 16, 1923.
18. The scales of the fossil fish *Eobrycon*: Science, new ser., vol. 57, p. 418, April 6, 1923.
19. Fossil insects from the Eocene of Texas: Am. Jour. Sci., 5th ser., vol. 5, pp. 397–400, 2 figs., May, 1923.
20. The Laramie flora: Torreyia, vol. 23, no. 3, pp. 52–53, May–June, 1923.
21. Fossil mammals at the Colorado Museum of Natural History: Sci. Monthly, vol. 17, no. 3, pp. 271–277, 7 figs., September, 1923.
22. A new genus of May flies from the Miocene of Florissant, Colorado [*Siphylurites*]: Psyche, vol. 30, no. 5, pp. 170–172, October, 1923.
23. Two fossil Hymenoptera from Florissant [Colorado] (Vespidæ, Megachilidæ): Entomological News, vol. 34, no. 9, pp. 270–271, November, 1923.
24. Fossil insects in the United States National Museum: U. S. Nat. Mus., Proc., vol. 64, art. 13, 15 pp., 2 figs., 2 pls., 1924.
25. A genuine fossil *Ophioglossum* [Tertiary, Wyoming]: Torreyia, vol. 24, no. 1, pp. 10–11, 1 fig., January–February, 1924.
26. An ancestor of the Agromyzidae [*Eomyza holoptera*, Green River Eocene, Roan Mountains, Colorado]: Entomologist, vol. 57, pp. 199–201, September, 1924.
27. Plant and insect fossils from the Green River Eocene of Colorado: U. S. Nat. Mus., Proc., vol. 66, art. 19, 13 pp., 2 pls., February 16, 1925.
28. (and Custer, Clarence). A new fossil *Inocellia* (Neuroptera) from Florissant: Entomologist, vol. 58, pp. 295–297, 1 fig., December, 1925.
29. The supposed fossil *Ophioglossum* [*O. hastatifforme*, Eocene, Wyoming]: Torreyia, vol. 26, no. 1, pp. 10–11, January–February, 1926.
30. A fossil orthopterous insect formerly referred to Mecoptera: Entomological Soc. Washington, Proc., vol. 28, no. 6, p. 142, June, 1926.

Cockerell, Theodore Dru Alison—Continued.

31. A Miocene *Orontium* (Araceae) : *Torreyia*, vol. 26, no. 4, p. 69, 1 fig., July-August, 1926.
32. Some Tertiary fossil insects : *Ann. and Mag. Nat. Hist.*, 9th ser., vol. 18, pp. 313-324, 14 figs., October, 1926.
33. Hunting fossil insects : *Sci. Am.*, vol. 135, pp. 264-265, October, 1926.
34. The antiquity of the Labiatae or mint family : *Nature*, vol. 118, p. 696, November 13, 1926.
35. An alga from the Eocene of Colorado : *Torreyia*, vol. 26, no. 6, pp. 111-112, 1 fig., November-December, 1926.
36. Fossil insects from the Miocene of Colorado : *Ann. Mag. Nat. Hist.*, 9th ser., vol. 19, pp. 161-166, February, 1927.
37. The Carboniferous insects of Maryland : *Ann. Mag. Nat. Hist.*, 9th ser., vol. 19, pp. 385-416, 3 pls., April, 1927.
38. A supposed fossil catmint [from Florissant, Colorado] : *Torreyia*, vol. 27, no. 3, p. 54, 1 fig., May-June, 1927.
39. A new oak from the Green River Eocene : *Torreyia*, vol. 27, no. 5, pp. 94-95, 1 fig., September-October, 1927.
40. Tertiary insects from eastern Oregon : *Carnegie Inst. Washington, Pub.* 346 (*Contributions to Paleontology*), pp. 64-65, 3 figs., October, 1927.
41. Fossil insects in the British Museum [some from Miocene of Florissant, Colorado] : *Annals and Mag. Nat. Hist.*, 9th ser., vol. 20, pp. 585-594, 2 figs., December, 1927.
42. A remarkable new dragon fly from the Eocene [of Colorado] (Odonata) : *Entomological News*, vol. 39, no. 10, pp. 297-301, 1 fig., 1 pl., December, 1928.

Cockfield, William Egbert.

1. Mayo area, Yukon : *Canada, Geol. Survey, Summ. Rept.*, 1918, pt. B, pp. 1-15, 1919.
2. Silver-lead deposits of the Twelvemile area, Yukon : *Canada, Geol. Survey, Summ. Rept.*, 1918, pt. B, pp. 15-17, 1919.
3. Explorations in the Ogilvie Range, Yukon : *Canada, Geol. Survey, Summ. Rept.*, 1919, pt. B, pp. 1-3, 1920.
4. Mayo area, Yukon : *Canada, Geol. Survey, Summ. Rept.*, 1919, pt. B, pp. 3-7, 1920.
5. Sixtymile and Ladue rivers area, Yukon : *Canada, Geol. Survey, Mem.* 123, 60 pp., 6 pls., map, 1921.
6. Silver-lead deposits of the Keno Hill area, Mayo district, Yukon : *Canada, Geol. Survey, Summ. Rept.*, 1920, pt. A, pp. 1-6, 1 fig., map, 1921.
7. The silver-lead ores of Mayo district, Yukon : *Canadian Min. Jour.*, vol. 42, no. 3, pp. 44-45, January 21, 1921.
8. Silver-lead deposits of Davidson Mountains, Mayo district, Yukon : *Canada, Geol. Survey, Summ. Rept.*, 1921, pt. A, pp. 1-6, 1 fig., 1 pl., 3 maps, 1922.
9. Explorations in southern Yukon : *Canada, Geol. Survey, Summ. Rept.*, 1922, pt. A, pp. 1-8, 1923.
10. Recent mining developments in the Mayo district, Yukon : *Canadian Min. Jour.*, vol. 44, no. 50, pp. 980-981, 1 fig., December 14, 1923.
11. Geology and ore deposits of Keno Hill, Mayo district, Yukon : *Canada, Geol. Survey, Summ. Rept.*, 1923, pt. A, pp. 1-21, 4 figs., map, 1924.
12. Silver-lead deposits of Beaver River area, Yukon : *Canada, Geol. Survey, Summ. Rept.*, 1923, pt. A, pp. 22-28, 2 figs., 1924.

Cockfield, William Egbert—Continued.

13. The Mayo silver-lead district, Yukon: Canadian Min. Jour., vol. 45, no. 37, pp. 891–893, 1 fig., September 12, 1924; Min. Mag., vol. 30, no. 2, pp. 122–123, 2 figs., February, 1924.
14. The silver-lead deposits of Beaver River district, Yukon: Canadian Min. Jour., vol. 46, no. 3, pp. 65–67, 1 fig., January 16, 1925.
15. Upper Beaver River area, Mayo district, Yukon: Canada, Geol. Survey, Summ. Rept., 1924, pt. A, pp. 1–18, 2 figs., 1 pl., map, 1925.
16. (and Bell, A. H.). Whitehorse district, Yukon: Canada, Geol. Survey, Mem. 150, 63 pp., 8 pls., map, 1926.
17. Silver-lead deposit in Atlin district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 15–24, 2 figs., 1926.
18. Explorations between Atlin and Telegraph Creek, British Columbia: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 25–32, map, 1926.
19. Aishihik Lake district, Yukon: Canada, Geol. Survey, Summ. Rept., 1926, pt. A, pp. 1–13, map, 1927.
20. Dezadeash Lake area, Yukon: Canada, Geol. Survey, Summ. Rept., 1927, pt. A, pp. 1–7, map, 1928.
21. Silver-lead deposits of Fifteenmile Creek, Yukon: Canada, Geol. Survey, Summ. Rept., 1927, pt. A, pp. 8–10, 1928.
22. Silver-lead deposits of Rude Creek, Yukon: Canada, Geol. Survey, Summ. Rept., 1927, pt. A, pp. 11–13, 1928.
23. Pueblo, Tamarack-Carlisle, and War Eagle-Leroi properties, Whitehorse copper belt, Yukon: Canada, Geol. Survey, Summ. Rept., 1927, pt. A, pp. 14–18, 1928.

Coffin, Reuben Clare. See also Hess, 15.

1. (and Perini, V. C., jr., and Collins, M. J.). Some anticlines of western Colorado: Colorado Geol. Survey, Bull. 24, 61 pp., 13 figs., 2 pls. (maps), 1920.
2. An anticline in Montezuma County; Colorado Geol. Survey, Bull. 24, pp. 47–59, 1 fig., 1 pl. (map), 1920.
3. Radium, uranium, and vanadium deposits of southwestern Colorado: Colorado Geol. Survey, Bull. 16, 231 pp., 53 figs., 4 pls. (incl. maps) 1921.
4. Ground waters of parts of Elbert, El Paso, and Lincoln counties: Colorado Geol. Survey, Bull. 26, pp. 3–8, 1921.

Colburn, Frona Eunice (Wait).

1. The kingship of Mt. Lassen . . . 69 pp., illus., San Francisco, Calif., Nemo Publishing Company, 1922.

Colby, Charles Carlyle.

1. Source book for the economic geography of North America. 418 pp., 11 maps, University of Chicago Press, Chicago, Illinois, 1921.

Cole, Arthur Augustus.

1. Cobalt, bonanza silver district of Ontario: Eng. and Min. Jour.-Press, vol. 118, no. 9, pp. 325–330, 7 figs., August 30, 1924.
2. The silver mining industry in Canada: Canadian Min. and Met. Bull., no. 183, pp. 807–843, 17 figs., July, 1927; Canadian Inst. Min. and Met., Trans., vol. 30, pp. 155–193, 17 figs. [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc., pt. 1, pp. 561–599, 17 figs., 1928.

Cole, George E.

1. Gypsum in Ontario: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 2, pp. 1-34, illus., 1925.
2. Gypsum in Ontario: Canadian Inst. Min. and Met., Bull., no. 154, pp. 148-162, February, 1925; Trans., vol. 28, pp. 194-208 [1926].
3. The development of gold mining in Canada: Canadian Min. and Met. Bull., no. 185, pp. 1013-1150, 50 figs., 1 pl., September, 1927; Canadian Inst. Min. and Met., Trans., vol. 30, pp. 10-154, 50 figs. [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc. pt. 1, pp. 415-559, 50 figs., 1928.

Cole, Grenville Arthur James.

1. The floor of the Valley of Ten Thousand Smokes [Alaska]: Nature, vol. 112, p. 251, August 18, 1923.

Cole, Lionel Heber. See also Keele, 5.

1. Notes of a discovery of rock salt in Nova Scotia [near Malagash, Cumberland County]: Canadian Min. Jour., vol. 40, pp. 8-9, 3 figs., January 8, 1919.
2. The salt industry and the possibilities for the future development in Canada: Canadian Min. Jour., vol. 40, pp. 346-356, May 14, 1919.
3. Notes on the salt industry of Canada, with special reference to the recent discovery of rock salt in Nova Scotia; Canadian Min. Inst., Trans., vol. 22, pp. 433-443 [1920].
4. Alkali deposits of western Canada: Canadian Min. Jour., vol. 42, no. 5, pp. 92-93, February 4, 1921.
5. Silica in Canada; its occurrence, exploitation, and uses; Part I, Eastern Canada: Canada, Dept. Mines, Mines Branch, 126 pp., 16 figs., 15 pls., 7 maps, 1923.
6. Alkali deposits of western Canada: Canada, Mines Branch, Summ. Rept., 1921, pp. 18-34, 1923.
7. Alkali deposits, western Canada: Canada, Mines Branch, Summ. Rept. 1922, pp. 9-15, 1924.
8. Volcanic ash near Waldeck, Saskatchewan: Canada, Mines Branch, Summ. Rept., 1922, pp. 15-20, 1 fig., 1924.
9. Sodium and magnesium salts of western Canada: Canadian Inst. Min. and Met., Monthly Bull., no. 143, pp. 100-128, 8 figs., March, 1924; (with discussion) Trans., vol. 27, pp. 209-247, 8 figs. [1925].
10. Sodium and magnesium salts of western Canada: Canada, Mines Branch, Investigations of Mineral Resources and the Mining Industry, 1923, pp. 47-53, 1924.
11. Sodium sulphate of western Canada; occurrence, uses and technology: Canada, Dept. Mines, Mines Branch, 160 pp., 16 figs., 15 pls., maps, 1926. [Pub. no. 646.]
12. (and Eardley-Wilmot, V. L.) Lithium-bearing minerals in Canada: Canada, Dept. Mines, Mines Branch, Investigations of mineral resources and the mining industry, 1925, pp. 69-75, 1926.
13. Silica in Canada, its occurrence, exploitation, and uses; Part II, western Canada: Canada, Dept. Mines, Mines Branch, 49 pp., 7 figs., 6 pls., 1928. [Pub. 686.]

Cole, W. Storrs.

1. A foraminiferal fauna from the Guayabal formation in Mexico: Bull. Am. Paleontology, vol. 14, no. 51, 46 pp., 5 pls., December 23, 1927.
2. A foraminiferal fauna from the Chapapote formation in Mexico: Bull. Am. Paleontology, vol. 14, no. 53, 32 pp., 4 pls., April 2, 1928.

Coleman, Arthur Philemon. See also Daly, 12.

1. The glacial history of Prince Edward Island and the Magdalen Islands: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 13, sec. 4, pp. 33-37, 1920.
2. Extent and thickness of the Labrador ice sheet: Geol. Soc. America, Bull., vol. 31, no. 2, pp. 319-328, 3 figs., June 30, 1920; abstract, no. 1, p. 128, March 31, 1920.
3. Lost placers of Ontario: Canadian Inst. Min. and Met., Monthly Bull. no. 100, pp. 655-657, August, 1920; Canadian Min. Inst., Trans., vol. 23, pp. 438-440 [1921].
4. Origin of the cobalt silver ores (discussion): Econ. Geology, vol. 15, no. 6, pp. 539-541, September, 1920.
5. Norite occurrences: Canadian Min. Jour., vol. 41, p. 966, November 26, 1920.
6. Northeastern part of Labrador and New Quebec: Canada, Geol. Survey, Mem. 124, 68 pp., 10 pls., 3 maps, 1921.
7. The Gaspé Peninsula; a study of the geology of the region and its influence on the inhabitants: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 15, pp. xxxix-lv, 1921.
8. Paleobotany and the earth's early history: Am. Jour. Sci., 5th ser., vol. 1, no. 4, pp. 315-319, April, 1921.
9. (and Parks, W. A.). Elementary geology; with special reference to Canada. 363 pp., 197 figs., London, J. M. Dent & Sons, Ltd., 1922.
10. Physiography and glacial geology of Gaspé Peninsula, Quebec: Canada, Geol. Survey, Bull. no. 34, 52 pp., 5 figs., 7 pls., map, 1922.
11. Glacial and postglacial lakes in Ontario: Toronto, Univ., Studies, Biological series, no. 21, 76 pp., 9 figs., 6 pls., 1922.
12. Geology and the nebular theory: Nature, vol. 109, p. 775, June 17, 1922.
13. The veins of Cobalt, Ontario [pre-Cambrian glaciation]: Econ. Geology, vol. 17, no. 4, pp. 297-299, June-July, 1922.
14. The geology and surface features of the Torngat Mountains in northern Labrador (abstract): Science, new ser., vol. 56, p. 176, August 11, 1922.
15. Pleistocene and recent ice conditions in northeastern Labrador (abstract): British Assoc. Adv. Sci., Rept. 90th meeting, p. 363, 1923.
16. Glacial features of Canada. In Handbook of Canada, pp. 375-379, Toronto, 1924.
17. Ice ages and the drift of continents: Am. Jour. Sci., 5th ser., vol. 7, pp. 398-404, May, 1924.
18. Evidences of pre-Cobalt glaciation: Canadian Min. Jour., vol. 45, no. 18, p. 420, May 2, 1924.
19. The Pleistocene rocks of the Toronto region [Ontario] (abstract): Pan-Am. Geologist, vol. 42, no. 1, p. 67, August, 1924; British Assoc. Adv. Sci., Rept. 92d Meeting, p. 379, 1925.
20. Raised beaches as related to the thickness of ice sheets (abstract): Pan-Am. Geologist, vol. 42, no. 1, p. 74, August, 1924; British Assoc. Adv. Sci., Rept. 92d Meeting, p. 385, 1925.
21. Pre-Cambrian climates (abstract): Pan-Am. Geologist, vol. 42, no. 4, p. 309, November, 1924; British Assoc. Adv. Sci., Rept. 92d Meeting, pp. 390-391, 1925.
22. Mining possibilities in Labrador: Canadian Min. Jour., vol. 45, no. 36, pp. 868-870, 4 figs., September 5, 1924.
23. Geology of the Sudbury nickel deposits: Econ. Geology, vol. 20, no. 6, pp. 565-576, September-October, 1924.

Coleman, Arthur Philemon—Continued.

24. Late Paleozoic climates: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 195-203, March, 1925.
25. The spacing of ice ages and early pre-Cambrian climates: *Sci. Monthly*, vol. 20, no. 5, pp. 473-475, May, 1925.
26. Ice ages, recent and ancient. xiii, 296 pp., 51 figs., 8 maps, New York, The Macmillan Company, 1926.
27. The magmatic origin of the Sudbury nickel ores: *Geol. Mag.*, vol. 63, pp. 108-112, March, 1926.
28. The Pleistocene of Newfoundland: *Jour. Geology*, vol. 34, no. 3, pp. 193-223, 4 figs., April-May, 1926.
29. The Sudbury ore deposits [Ontario]: *Canadian Min. Jour.*, vol. 47, no. 46, pp. 1080-1081, November 12, 1926.
30. Glacial and interglacial periods in eastern Canada: *Jour. Geology*, vol. 35, no. 5, pp. 385-403, July-August, 1927.
31. Unsolved geological problems of Arctic America: *Problems of Polar Research*, *Am. Geog. Soc.*, Spec. Pub. no. 7, pp. 63-72, 1928.
32. The anthraxolite of Sudbury [Ontario]: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 25-27, January, 1928.
33. Long range correlation of varves (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 150, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 66, February, 1928.

Coleman, Charles L. See Dresser, 4.

Collet, Leon W. See Bailey, E. B., 2; Twenhofel, 22, 29.

Collier, Arthur James. See also Redwood, 1; U. S. Geological Survey, 11.

1. Geology of northeastern Montana (U. S. Geol. Survey, Prof. Paper 120, pp. 17-39, 1918) (abstract by R. W. Stone): *Washington Acad. Sci., Jour.*, vol. 9, no. 17, p. 531, October 19, 1919.
2. The Nesson anticline, Williams County, North Dakota (U. S. Geol. Survey, Bull. 691, pp. 211-221, 1918) (abstract by R. W. Stone): *Washington Acad. Sci., Jour.*, vol. 9, no. 2, pp. 49-50, January 19, 1919.
3. Coal south of Mancos, Montezuma County, Colorado: U. S. Geol. Survey, Bull. 691, pp. 293-310, 6 pls. (incl. map), 2 figs., February 24, 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 9, no. 11, p. 318, June 4, 1919.
4. Oil in the Warm Springs and Hamilton domes, near Thermopolis, Wyoming: U. S. Geol. Survey, Bull. 711, pp. 61-73, 4 pls. (incl. maps), 1 fig., January 16, 1920. Abstract, *Washington Acad. Sci., Jour.*, vol. 10, no. 18, pp. 519-520, November 4, 1920.
5. Gas in the Big Sand Draw anticline, Fremont County, Wyoming: U. S. Geol. Survey, Bull. 711, pp. 75-83, 1 pl. (map), 2 figs., February 5, 1920. Abstract, *Washington Acad. Sci., Jour.*, vol. 10, no. 18, p. 520, November 4, 1920.
6. Anticlines near Maverick Springs, Fremont County, Wyoming: U. S. Geol. Survey, Bull. 711, pp. 149-166, 3 pls. (incl. map), 1 fig., April 26, 1920.
7. The Osage oil field, Weston County, Wyoming: U. S. Geol. Survey, Bull. 736, pp. 71-110, 1 fig., 5 pls., October 16, 1922.
8. (and Cathcart, S. H.). Possibility of finding oil in laccolithic domes south of the Little Rocky Mountains, Montana: U. S. Geol. Survey Bull. 736, pp. 171-178, 2 figs., October 31, 1922.

Collier, Arthur James—Continued.

9. The Scobey lignite field, Valley, Daniels, and Sheridan counties, Montana: U. S. Geol. Survey, Bull. 751, pp. 157–230, 3 figs., 9 pls. (incl. map), November 17, 1924.
10. The unconformity between the Madison limestone and Ellis formation in northern Montana (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, pp. 130–131, March 4, 1927.

Collingwood, Douglas Moore.

1. Graphic method for determining the surface projection of the axis and crest traces at any depth of an asymmetrical anticline: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 2, pp. 159–162 (with discussion by K. C. Heald, C. W. Tomlinson, and F. H. Lahee, pp. 328–329, 1 fig., and Hugh B. Webster, pp. 497–498, 1 fig.), 2 figs., March–April, 1921.
2. Some structural and stratigraphic features affecting relative amounts of oil production in Illinois: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 2, pp. 311–323, 3 figs., March–April, 1921.
3. Oil and gas development in the vicinity of Jacksonville: Illinois State Geol. Survey, Extract from Bull. no. 44, 30 pp., 3 figs., 1923.
4. Oil production in Illinois: Illinois State Acad. Sci., Trans., vol. 16, pp. 372–385, 1 fig., 1923.
5. Oil developments of 1922 in Illinois: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 1, pp. 78–82, January–February, 1923.
6. Further consideration of prospects for oil in the Decatur area: Illinois State Geol. Survey, Report of Investigations, no. 1, 44 pp., 1 fig., 1 pl. (map), 1924.
7. Extension of Allendale oil field: Illinois State Geol. Survey, Press Bull., 4 pp., map, May 17, 1924.
8. The Lytton Springs oil field, Caldwell County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 10, pp. 953–975, 4 figs., 2 pls. (incl. maps), October, 1926.

Collins, George Ernest.

1. Hydrocarbon veindikes and oil shales: Eng. and Min. Jour.-Press, vol. 119, no. 19, p. 773, May 9, 1925.
2. Genesis of sulphide ores: Eng. and Min. Jour.-Press, vol. 121, no. 9, p. 373, February 27, 1926.

Collins, M. J. See Coffin, 1; Perini, 1.

Collins, Robert F. See Baldwin, 1.

Collins, R. Lee. See also Roberts, J. K., 6.

1. Travertine deposits in Virginia: Pan-Am. Geologist, vol. 41, no. 2, pp. 103–106, 1 fig., March, 1924.
2. A lower Eocene termite from Tennessee: Am. Jour. Sci., 5th ser., vol. 9, pp. 406–410, 7 figs., May, 1925.

Collins, William Dennis.

1. Mineral waters in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 2, pp. 161–166, October 29, 1921.
2. Mineral waters in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 2, pp. 229–236, February 5, 1923.
3. Mineral waters in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 2, pp. 207–220, December 20, 1923.
4. Mineral waters in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 2, pp. 109–124, 1 fig., November 6, 1924.

Collins, William Dennis—Continued.

5. (and Howard, C. S.). Index of analyses of natural waters in the United States: U. S. Geol. Survey, Water-Supply Paper 560, pp. 53-85, May, 1925.
6. (and Howard, C. S.). Chemical character of waters of Florida: U. S. Geol. Survey, Water-Supply Paper 596, pp. 177-233, 8 figs., February 17, 1928.

Collins, William Henry.

1. The ore deposits of Goudreau and Magpie-Hawk areas in Michipicoten district, Ontario: Canada, Geol. Survey, Summ. Rept., 1918, pt. E., pp. 4-30, 5 figs., 1919.
2. The Michipicoten iron ranges: Canadian Inst. Min. and Met., Monthly Bull. no. 104, pp. 930-939, 1 pl., December, 1920; Canadian Min. Inst., Trans., vol. 23, pp. 426-436, 1 pl. [1921].
3. Geological Survey [report]: Canada, Dept. Mines, Rept. for the fiscal year ending March 31, 1921, pp. 5-15, Ottawa, 1921.
4. An outline of the physiographic history of northeastern Ontario: Jour. Geology, vol. 30, no. 3, pp. 199-210, 3 figs., April-May, 1922.
5. Field work of the Geological Survey [of Canada]: Canadian Inst. Min. and Met., Bull. no. 123, pp. 743-751, July, 1922.
6. [Report of the] Geological Survey [of Canada]: Canada, Dept. Mines, Rept. for the fiscal year ending March 31, 1922, pp. 3-20, 1922.
7. The geology of Ontario's iron ores: Canadian Min. Jour., vol. 43, no. 37, pp. 625-626, September 15, 1922.
8. Geological survey [report for 1922-23]: Canada, Dept. Mines, Rept. . . . 1923, pp. 7-25, 1923.
9. Field work of the geological survey [of Canada]: Canadian Min. Jour., vol. 44, no. 28, pp. 530-533, July 13, 1923.
10. The geology and physical geography of Canada. In Handbook of Canada, pp. 346-374, 2 figs., Toronto, 1924.
11. North shore of Lake Huron: Canada, Geol. Survey, Mem. 143, 160 pp., 9 figs., 17 pls., 3 maps., 1925. Extracts, with title, Ore deposits of the district north of Lake Huron, Ontario: Canadian Min. Jour., vol. 46, no. 50, pp. 1134-1136, December 11, no. 51, pp. 1154-1156, December 18, 1925, vol. 47, no. 3, pp. 54-56, January 15, no. 4, pp. 83-84, January 22, 1926.
12. [Annual report of the] Geological Survey: Canada, Dept. Mines, Report for the year ending March 31, 1924, pp. 9-33, 1925.
13. [Annual report of the] Geological Survey: Canada, Dept. Mines, Rept. for the year ending March 31, 1925, pp. 11-34, 1925.
14. Donaldson Bogart Dowling: Canadian Min. Jour., vol. 46, no. 24, pp. 581-582, portr., June 12, 1925; Canadian Inst. Min. and Met., Bull., no. 159, pp. 688-691, portr., July, 1925.
15. (and Quirke, T. T.). Michipicoten iron ranges: Canada, Geol. Survey, Mem. 147, pp. 1-141, 15 figs., 9 pls. (incl. maps), 1926. Extracts, with titles, The Helen iron ore deposits: Canadian Min. Jour., vol. 47, no. 27, pp. 666-670, 3 figs., July 2, 1926; and Pyrite deposits of Michipicoten district: Canadian Min. Jour., vol. 47, no. 28, pp. 685-688, July 9, 1926.
16. [Annual report of the] Geological Survey: Canada, Dept. Mines, Rept. for the year ending March 31, 1926, pp. 9-31, 1926.
17. Donaldson Bogart Dowling: Roy. Soc. Canada, Proc. and Trans., 3d ser. vol. 20, pp. iv-v, portr., 1926.

Collins, William Henry—Continued.

18. Field work of the Geological Survey [of Canada]: Canadian Min. Jour., vol. 47, no. 31, pp. 756-759, July 30, 1926.
19. The Nottaway sheet [northwestern Quebec]: Canadian Min. Jour., vol. 48, no. 6, p. 117, February 11, 1927.
20. [Annual report of the] Geological Survey: Canada, Dept. Mines, Rept. for the year ending March 31, 1927, pp. 12-30, 1928.
21. (and James, W. F.) Mountain building in the Canadian shield (abstract): Pan-Am. Geologist, vol. 49, no. 2, pp. 159-160, March, 1928.
22. (and James, W. F.). Orogeny of the Canadian shield (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 182-183, March 30, 1928.
23. The Keewatin iron formations: Fennia 50, no. 8, 20 pp., 5 figs., Helsingfors, 1928.

Collom, Roy Edward.

1. Notes on California oil field practice: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 2, pp. 114-130, 3 figs., March-April, 1923.
2. Geology of the Santa Maria district [California]: Oil Bull., vol. 14, no. 4, pp. 368-369, 1 fig. (map), April, 1928.

Colony, Roy Jed. See also Fairbanks, 12; Lindgren, 18.

1. High-grade silica materials for glass, refractories, and abrasives: New York State Mus. Bull. nos. 203, 204, 31 pp., 15 pls., 1919.
2. A norite of the Sudbury type in Manitoba; a reconnaissance: Canadian Inst. Min. and Met., Monthly Bull. no. 13, pp. 862-872, 7 figs., November, 1920; Trans. vol. 24, pp. 112-123, 7 figs. [1922]; Canadian Min. Jour., vol. 41, pp. 967-970, 7 figs., November 26, 1920.
3. The magnetite iron deposits of southeastern New York: New York State Museum Bull., nos. 249-250, 161 pp., 13 figs., 15 pls., 1923.
4. The final consolidation phenomena in the crystallization of igneous rock: Jour. Geology, vol. 31, no. 3, pp. 169-178, 12 figs., April-May, 1923.
5. An unusual quartz-diamond intergrowth: Am. Jour. Sci., 5th ser., vol. 5, pp. 400-402, 2 figs., May, 1923.
6. Field work in the Schunemunk region during 1924: New York State Mus. Bull., no. 260, pp. 22-23, 1925.
7. Some problems in the Schunemunk area: New York State Mus. Bull., no. 267, pp. 26-29, 1926.
8. A feldspar-chalcopyrite rock-ore: Eng. and Min. Jour., vol. 123, no. 15, pp. 605-607, 5 figs., April 9, 1927.
9. (and Meyerhoff, H. A.). The copper prospect at Barrio Pasto, Porto Rico: Econ. Geology, vol. 23, no. 5, pp. 515-527, 8 figs., August, 1928.

Colorado, State Board of Immigration.

1. Colorado, mineral, oil, and shale resources. 47 pp. [1925].

Conard, H. S.

1. Fossil plants and classification: Am. Botanist, vol. 27, no. 3, pp. 95-101, 1 fig., August, 1921.

Condit, Daniel Dale. See also Redwood, 1; Vaughan, 16.

1. Relations of late Paleozoic and early Mesozoic formations of southwestern Montana and adjacent parts of Wyoming (U. S. Geol. Survey, Prof. Paper 120, pp. 111-121, 1918) (abstract by R. W. Stone): Washington Acad. Sci., Jour., vol. 9, no. 17, pp. 530-531, October 19, 1919.

Condit, Daniel Dale—Continued.

2. Oil shale in western Montana, southeastern Idaho, and adjacent parts of Wyoming and Utah: U. S. Geol. Survey, Bull. 711, pp. 15-40, 1 pl. (map), 2 figs., September 27, 1919. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 9, no. 20, p. 638, December 4, 1919.
3. Economic geology of the Summerfield and Woodsfield quadrangles, Ohio, with descriptions of coal and other mineral resources except oil and gas: U. S. Geol. Survey, Bull. 720, 156 pp., 5 figs., 12 pls. (incl. maps), 1923.
4. Phosphate deposits in the Wind River Mountains, near Lander, Wyoming: U. S. Geol. Survey, Bull. 764, 39 pp., 1 fig., 3 pls. (incl. map), 1924.
5. (and Finch, E. H., and Pardee, J. T.). Phosphate rock in the Three Forks-Yellowstone Park region, Montana: U. S. Geol. Survey, Bull. 795, pp. 147-209, 1 fig., 3 pls. (incl. maps), January 9, 1928.

Condra, George Evert. See also Dunbar, 11.

1. Road materials of Nebraska; Part 2, Sand: Nebraska, Univ., Nebraska Conservation and Soil Survey, Bull. 6, 63 pp., 34 figs., Lincoln, Nebraska, 1917.
2. The stratigraphy of the Pennsylvanian system in Nebraska: Nebraska Geol. Survey, 2d ser., Bull. 1, 291 pp., 38 figs., 7 pls. (incl. maps), 1927.

Conine, W. H. See Twenhofel, 9.

Conhaim, H. J. See Grout, 14.

Conkling, R. A. See also Ambrose, 1; Washburne, 3.

1. Oil and gas in Oklahoma; geology of Pontotoc County: Oklahoma Geol. Survey, Bull. no. 40-S, 27 pp., 5 figs., map, December, 1927.

Connecticut State Geological and Natural History Survey.

1. Eighth biennial report of the commissioners . . . 1917-18. Bull. no. 28. 21 pp., Hartford, 1919.

Connolly, Joseph Peter. See also O'Harra, 5; Ward, 13.

1. Geology and mineralogy of the Keystone district [Pennington County, South Dakota]: Black Hills Engineer, vol. 13, no. 1, pp. 11-18, January, 1925.
2. The Etta mine [Keystone district, South Dakota]: Black Hills Engineer, vol. 13, no. 1, pp. 18-23, 8 figs., January, 1925.
3. The geology class [of the South Dakota School of Mines] in the Badlands [of South Dakota]: Black Hills Engineer, vol. 14, no. 2, pp. 105-111, illus., March, 1926.
4. The Tertiary mineralization of the northern Black Hills: South Dakota School of Mines, Bull. no. 15, 130 pp., 14 figs., 19 pls., September, 1927.
5. Geology of the southern Black Hills: Black Hills Engineer, vol. 16, no. 1 pp. 59-67, 2 figs., January, 1928.

Connor, M. F. See Johnston, R. A. A., 2.

Conrey, Guy Woolard.

1. Geology of Wayne County: Ohio, Geol. Survey, Fourth series, Bull. 24, 155 pp., 10 pls., 5 maps, 1921.
2. The depth of leaching of the early Wisconsin drift in Ohio (abstract): Ohio Acad. Sci., Proc., vol. 8, pt. 4, pp. 179-180, 1928; Ohio Jour. Sci., vol. 28, no. 3, pp. 157-158, May, 1928.

Cook, Charles Wilford.

1. A new occurrence of ilsemannite [Gibson, Shasta County, California]: Am. Jour. Sci., 5th ser., vol. 4, pp. 50-52, July, 1922.
2. Study of capillary relationships of oil and water: Econ. Geology, vol. 18 no. 2, pp. 167-172, 1 fig., March, 1923.
3. Attempt to study the actual capillary relationships of oil and water (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 100, March 30, 1923.
4. Marcasite from the Racine dolomite, Racine, Wisconsin: Am. Mineralogist, vol. 9, no. 7, pp. 151-152, July, 1924.
5. Molybdenite deposit near New Ross, Nova Scotia: Econ. Geology, vol. 20, no. 2, pp. 185-188, March-April, 1925.
6. Fractionation of petroleum during capillary migration: Econ. Geology, vol. 20, no. 7, pp. 639-641, 1 fig., November, 1925.
7. The influence of joints in the formation of islands at the western end of Lake Erie: Michigan Acad. Sci., Papers, vol. 5, pp. 243-251, 5 figs., 1926; abstract, Pan-Am. Geologist, vol. 44, no. 2, p. 152, September, 1925.
8. (and Ehlers, George M.). A possible occurrence of the Richmond formation in the vicinity of Clayton, Idaho: Michigan Acad. Sci., Papers, vol. 7, pp. 51-53, 1927.
9. Fractionation and decomposition of petroleum during capillary migration: Econ. Geology, vol. 22, no. 3, pp. 230-232, 1 fig., May, 1927.
10. The progress of replacement and the formation of concretions: Michigan Acad. Sci., Papers, vol. 8, pp. 285-292, 1 fig. 1 pl., 1928.

Cook, Harold James. See also, Abel, 3; Gregory, W. K., 19; Hay, 41; Schramm, 2.

1. Two new bunomastodonts from Colorado: Colorado Mus. Nat. Hist., Proc., vol. 4, no. 1, 15 pp., 6 figs., February 15, 1922.
2. A Pliocene fauna from Yuma County, Colorado, with notes on the closely related Snake Creek beds, from Nebraska: Colorado Mus. Nat. Hist., Proc., vol. 4, no. 2, 29 pp., 14 pls., March 31, 1922.
3. Oldest known peccary from America: Pan-Am. Geologist, vol. 37, no. 5, pp. 357-358, 1 fig., June, 1922.
4. Basic Tertiary conglomerate of Black Hills: Pan-Am. Geologist, vol. 37, no. 5, pp. 421-424, June, 1922.
5. Manganese fulgurites: Nebraska State Mus., Bull. 5, pp. 41-44, 2 figs., June, 1925.
6. Definite evidence of human artifacts in the American Pleistocene: Science, new ser., vol. 62, pp. 459-460, November 20, 1925.
7. A new genus of uinatheres from Colorado: Colorado Mus. Nat. Hist., Proc., vol. 6, no. 2, pp. 7-11, 5 pls., February 27, 1926.
8. New Eocene titanotheres from Moffat County, Colorado: Colorado Mus. Nat. Hist., Proc., vol. 6, no. 3, pp. 12-18, 11 pls., March 5, 1926.
9. A new gigantic fossil dog from Colorado: Colorado Mus. Nat. Hist., Proc., vol. 6, no. 5, pp. 29-31, 1 pl., April 16, 1926.
10. The antiquity of man in America; who were the first Americans? whence came they?: Sci. Am., vol. 135, no. 5, pp. 334-336, 7 figs., November, 1926.
11. A new rhinoceros of the genus *Teleoceras* from Colorado: Colorado Mus. Nat. Hist., Proc., vol. 7, no. 1, 2 pp., 3 pls., February 27, 1927.
12. New geological and paleontological evidence bearing on the antiquity of man in America: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 27, no. 3, pp. 240-247, 9 figs., May-June, 1927.

Cook, Harold James—Continued.

13. New trails of ancient man; remarkable finds of ancient man have recently been made in Nebraska and Oklahoma: *Sci. Am.*, vol. 137, no. 2, pp. 114-117, 10 figs., August, 1927.
14. A new fossil bison from Texas: *Colorado Mus. Nat. Hist., Proc.*, vol. 8, no. 3, pp. 34-36, 1 pl., March 15, 1928.
15. Further evidence concerning man's antiquity at Frederick, Oklahoma: *Science*, new ser., vol. 67, pp. 371-373, April 6, 1928.
16. A new longirostrine elephant from Nebraska, *Trilophodon phippesi*, sp. nov.: *Colorado Mus. Nat. Hist., Proc.*, vol. 8, no. 4, pp. 37-43, 2 pls., May 1, 1928.
17. Note on an interesting juvenile lower jaw of *Elephas* cf. *jeffersoni* [Frederick, Oklahoma]; *Colorado Mus. Nat. Hist., Proc.*, vol. 8, no. 5, pp. 44-45, 2 figs., May 2, 1928.

Cook, John H.

1. Ablation of the eastern lobe of the Wisconsin ice sheet (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 117-118, March 31, 1922.
2. The disappearance of the last glacial ice sheet from eastern New York: *New York State Mus. Bull.*, no. 251, pp. 158-176, 1 fig., 1924.

Cook, Le Moyne.

1. A rhinoceros bone bed [Agate, Nebraska]: *Black Hills Engineer*, vol. 14, no. 2, pp. 95-99, 3 figs., March, 1926.
2. Annual field trip of mineralogy class [of South Dakota State School of Mines]: *Black Hills Engineer*, vol. 15, no. 3, pp. 164-165, May, 1927.

Cooke, Charles Wythe. See also Cushman, 10; LaForge, 4; Vaughan, 16.

1. Tertiary mollusks from the Leeward Islands and Cuba: *Carnegie Inst. Washington, Pub.* 291, pp. 103-156, 16 pls., 1919.
2. Stratigraphic significance of *Orthaulax* (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 206, March 31, 1920.
3. Geologic reconnaissance in Santo Domingo (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 217-219, March 31, 1920.
4. New names for West Indian Tertiary pectens: *Nautilus*, vol. 34, no. 4, p. 137, April, 1921.
5. Macon five million years ago: *The Macon [Georgia] Magazine*, vol. 1, no. 6, pp. 7-8, September, 1921.
6. *Orthaulax*, a Tertiary guide fossil: *U. S. Geol. Survey, Prof. Paper* 129, pp. 23-37, 4 pls., September 29, 1921. Abstract by Julia Gardner, *Washington Acad. Sci., Jour.*, vol. 11, no. 19, pp. 471-472, November 19, 1921.
7. The Byram calcareous marl of Mississippi: *U. S. Geol. Survey, Prof. Paper* 129, pp. 79-85, March 17, 1922.
- 7a. The correlation of the Vicksburg group: *U. S. Geol. Survey, Prof. Paper* 133, pp. 1-9, 1923.
8. The relative dependableness of different kinds of fossils and some suggestions to collectors: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 2, pp. 183-187, March-April, 1923; *Oil Engineering and Finance*, vol. 4, no. 84, pp. 173-174, August 18, 1923.
9. Recent contributions to the stratigraphy of the Coastal Plain of the United States: *Pan-Pacific Sci. Cong., Australia, 1923, Proc.*, vol. 1, pp. 862-864 [1924].

Cooke, Charles Wythe—Continued.

10. American and European Eocene and Oligocene mollusks: *Geol. Soc. America, Bull.*, vol. 35, no. 4, pp. 851–856, December 30, 1924; abstract, no 1, p. 174, March 30, 1924.
11. Coastal terraces of Georgia (abstract): *Washington Acad. Sci., Jour.*, vol. 15, no. 8, p. 184, April 19, 1925; *Pan-Am. Geologist*, vol. 43, no. 5, pp. 375–376, June, 1925.
12. Correlation of the Eocene formations in Mississippi and Alabama: *U. S. Geol. Survey, Prof. Paper* 140, pp. 133–136, December 29, 1925.
13. Geology of Alabama; The Cenozoic formations: Alabama, *Geol. Survey, Spec. Rept.* no. 14, pp. 251–297, 5 pls., 1926.
14. Correlation of the basal Cretaceous beds of the southeastern States: *U. S. Geol. Survey, Prof. Paper* 140, pp. 137–139, January 12, 1926.
15. New Eocene mollusks from Jackson, Mississippi: *Washington Acad. Sci., Jour.*, vol. 16, no. 5, pp. 132–138, 1 pl., March 4, 1926.
16. Fossil man and Pleistocene vertebrates in Florida: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 441–452, November, 1926.
17. (and Stephenson, Lloyd W.). The Eocene age of the supposed late Upper Cretaceous greensand marls of New Jersey: *Jour. Geology*, vol. 36, no. 2, pp. 139–148, February–March, 1928; abstract, *Pan-Am. Geologist*, vol. 49, no. 3, pp. 225–226, April, no. 4, p. 299, May, 1928.
18. New Vicksburg (Oligocene) mollusks from Mexico: *U. S. Nat. Mus., Proc.*, vol. 73, art. 10, 11 pp., 2 pls., 1928.
19. The stratigraphy and age of the Pleistocene deposits in Florida from which human bones have been reported: *Washington Acad. Sci., Jour.*, vol. 18, no. 15, pp. 414–421, September 19, 1928.
20. (and Stephenson, L. W.). The Eocene age of the supposed late Upper Cretaceous greensand marls of New Jersey (abstract): *Washington Acad. Sci., Jour.*, vol. 18, no. 9, p. 262, May 4, 1928.

Cooke, Harold Caswell.

1. Geology of Matachewan district, northern Ontario: Canada, *Geol. Survey, Mem.* 115, 60 pp., 5 figs., map, 1919.
2. Some stratigraphic and structural features of the pre-Cambrian of northern Quebec: *Jour. Geology*, vol. 27, nos. 2–5, pp. 65–78, 180–203, 263–275, 367–382, 13 figs., 1919.
3. The origin of the gold deposits of Matachewan district, northern Ontario: *Econ. Geology*, vol. 14, no. 4, pp. 281–301, 4 figs. (maps), June, 1919.
4. Matachewan [Ontario] gold area; the Otisse and Davidson gold deposits: *Canadian Min. Jour.*, vol. 40, pp. 519–524, 5 figs., July 16, 1919.
5. Gabbros of East Sooke and Rocky Point [Vancouver Island, British Columbia]: Canada, *Geol. Survey, Mus. Bull.*, no. 30, 48 pp., 1 fig., 1 map, November 15, 1919.
6. Exploration of the townships west of Kirkland Lake, Ontario: Canada, *Geol. Survey, Summ. Rept.*, 1919, pt. E, pp. 18–19, 1920.
7. A correlation of the pre-Cambrian formations of northern Ontario and Quebec: *Jour. Geology*, vol. 28, no. 4, pp. 304–332, 5 figs., May–June, 1920.
8. Kenogami, Round, and Larder Lake areas, Timiskaming district, Ontario: Canada, *Geol. Survey, Mem.* 131, 64 pp., 2 figs., 3 maps, 1922.
9. Geology and mineral resources of Rice Lake and Oiseau River areas, Manitoba: Canada, *Geol. Survey, Summ. Rept.*, 1921, pt. C, 36 pp., 6 figs., 2 pls. (maps), 1922.

Cooke, Harold Caswell—Continued.

10. Opasatika map area, Timiskaming County, Quebec: Canada, Geol. Survey, Summ. Rept., 1922, pt. D, pp. 19-74, 9 figs., map, 1923.
11. The Quebec gold field: Canadian Min. Jour., vol. 44, no. 15, pp. 276-278, 1 fig., April 13, 1923; Min. Mag., vol. 28, no. 6, pp. 382-383, 1 fig., June, 1923.
12. Exploration for gold in northern Quebec: Canadian Min. Jour., vol. 44, no. 21, pp. 390-392, 1 fig., May 25, 1923; Min. Mag., vol. 29, no. 1, pp. 49-51, 1 fig., July, 1923.
13. Character and origin of the ore deposits, Argonaut gold mine, Gauthier township, Timiskaming district, Ontario: Canada, Geol. Survey, Summ. Rept., 1923, pt. C1, pp. 42-60, 5 figs., 1924.
14. Recent gold discoveries at Larder Lake, Timiskaming district, Ontario: Canada, Geol. Survey, Summ. Rept. 1923, pt. C1, pp. 61-73, 4 figs., 1 pl., 1924.
15. Some gold deposits of western Quebec: Canada, Geol. Survey, Summ. Rept. 1923, pt. C1, pp. 76-125, 15 figs., 1924.
16. Folding and mountain-building in pre-Cambrian of northern Ontario and Quebec (abstract): Pan-Am. Geologist, vol. 42, no. 4, pp. 308-309, November, 1924.
17. Progress of structural determinations in the Archean rocks of Ontario and Quebec: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 19, pp. 1-19, 7 figs., 1925.
18. Recent developments in northern Quebec: Canadian Inst. Min. and Met., Bull., no. 156, pp. 343-350, April, 1925.
19. "Between the Archean and Keweenawan is the Huronian": Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, sec. 4, pp. 17-37, 1 fig., 1926.
20. Recent developments in northwestern Quebec: Canadian Inst. Min. and Met., Bull., no. 169, pp. 627-640, 2 figs., May, 1926; Trans., vol. 29, pp. 237-250, 2 figs. [1927].
21. Ore deposits of the Rouyn area, Quebec: Canadian Min. Jour., vol. 47, no. 23, pp. 572-575, June 4, 1926.
22. Some chemical changes in rocks caused by shearing: Canada, Geol. Survey, Bull. no. 46, pp. 22-30, 3 figs., 1927. [Pub. 2125.]
23. Argonaut gold mine, Gauthier Township, Ontario: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 12-16, 1927.
24. Further developments at Larder Lake, Ontario: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 17-19, 1927.
25. Wright mine, Duhamel Township, Quebec: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 20-27, 1 fig., 1927.
26. Gold and copper deposits of western Quebec: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 28-51, 1 fig., 1927.
27. An original Keewatin surface in northern Quebec: Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 53-59, 2 figs., March, 1927.
28. A new era in geology; contributed discussion on the geology and mineral deposits of the Harricanaw and Bell River basins by Geo. W. Bain: Canadian Min. and Met. Bull., no. 180, pp. 409-413, April, 1927. (See Bain, 22.)
29. On the origin of the copper ores of Rouyn district, Quebec: Canada, Geol. Survey, Summ. Rept., 1926, pt. C, pp. 48-55, map, 1927.
30. Gisements d'or et de cuivre du Québec occidental: Soc. géographie Québec, Bull., vol. 22, nos. 1-2, pp. 120-126, January-May, no. 3, pp. 129-137, June-September, 1928.

Cooke, Harold Caswell—Continued.

31. (and James, W. F.). A general summary of observations on the sulphide deposits of northern Quebec: *Canadian Min. Jour.*, vol. 49, no. 34, pp. 670–674, no. 35, pp. 696–698, 7 figs., August 24 and 31, 1928; extract, *Min. Mag.*, vol. 39, no. 5, pp. 316–321, November, 1928.
32. Ore relations at the Horne and Aldermac mines, Quebec: *Canadian Min. and Met. Bull.*, no. 198, pp. 1184–1194, October, 1928; *Canadian Inst. Min. and Met., Trans.*, vol. 31, pp. 57–82 [1929].

Cooke, M. K. See Gunter, 3.

Cooley, Mary E. See Ehlers, 12.

Cooper, Chalmer Lewis. See also Clark, G. C., 3; Shannon, 4; Woodruff, 4.

1. The Sycamore limestone: *Oklahoma Geol. Survey, Circular* no. 9, 26 pp., 4 figs., 4 pls., map, December, 1926.
2. Preliminary report on the Sycamore limestone: *Oklahoma Acad. Sci., Proc.*, vol. 6, pt. 2, 1926 (*Oklahoma, Univ., Bull., new ser.*, no. 348), pp. 254–259, January 1, 1927.
3. The Oklahoma coal fields: *U. S. Bur. Mines, Tech. Paper* 411, pp. 1–7, 2 figs., 1928.
4. The correlation of coals in Oklahoma and Kansas: *Oklahoma Acad. Sci., Proc.*, vol. 7 (*Oklahoma, Univ., Bull., new ser.*, no. 409), pp. 158–168 [1928].

Cooper, Herschel H. See Jenkins, 5.

Copaux, H.

1. The beryllium industry: *Mineral Foote-Notes*, vol. 4, no. 2, pp. 3–6, March–April, 1920.

Copp, W. W.

1. (and Godde, H. A.). Report on southeastern portion of Thirty-five anticline, Sunset oil field, Kern County, California: *California State Min. Bur., Summary of Operations California Oil Fields*, vol. 9, no. 5, pp. 5–33, 7 pls. (incl. maps), November, 1923.

Corbett, Clifton Sherwin.

1. Method for projecting structure through an angular unconformity: *Econ. Geology*, vol. 14, no. 8, pp. 610–618, 4 figs., December, 1919.
2. Leverrierite as a schist-forming mineral: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 247–268, 1 fig., September, 1925.
3. Another Kansas meteorite?: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 495–498, 3 figs., December, 1926.

Corbin, J. Ross. See Pennsylvania G. S., 1.

Corey, W. H.

1. Fauna and stratigraphy of Vaqueros formation in Ventura and Santa Barbara counties, California (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 319, May, 1928.

Corless, C. V. See also Goodwin, W. L., 3; Mackenzie, G. C., 2.

1. Some of Canada's national problems and their physiographic cause: *Canadian Min. Jour.*, vol. 44, no. 17, pp. 314–317, 1 fig., no. 18, pp. 338–342, May 4, 1923.
2. The mineral wealth of Ontario (abstract): *Canadian Min. Jour.*, vol. 45, no. 14, pp. 332–333, April 4, 1924.

Corless, C. V.—Continued.

3. The mineral wealth of the pre-Cambrian: Canadian Inst. Min. and Met., Monthly Bull. no. 146, pp. 366-392, June, 1924; Trans., vol. 27, pp. 174-208 [1925].
4. Mineral wealth of the pre-Cambrian in Canada: Canadian Min. Jour., vol. 45, nos. 30-33, pp. 719-721, 737-739, 773-775, 796-798, July 25, August 1, 8, and 15, 1924.

Cornwall, Ira Edmund.

1. Some notes on the Sooke formation, Vancouver Island, British Columbia: Canadian Field-Naturalist, vol. 36, no. 7, pp. 121-123, 1 fig., October, 1922.
2. Fossil Cirripedia from the upper Oligocene Sooke formation of Vancouver Island, British Columbia: California, Univ., Dept. Geol. Sci., Bull., vol. 16, no. 9, pp. 399-406, 2 pls., March 17, 1927.

Corral y Alemán, José Isaac del.

1. Informe sobre el reconocimiento de la mina de cobre "La Niña" [Pinar del Río, Cuba]: Cuba, Dirección de montes y minas, Bol. minas no. 5, pp. 71-82, 1919.
2. Reconocimiento geológico de la mina "San José," situada en Malezas, cuartón de San Gil, término municipal de Santa Clara: Cuba, Dirección de montes y minas, Bol. minas, no. 7, pp. 42-50, 1923.
3. Investigaciones sobre el petróleo en Cuba: Cuba, Dirección de montes y minas, Bol. minas, no. 8, pp. 1-11, August, 1925.
4. Investigaciones sobre el petróleo en Cuba: Acad. Cienc. Méd., Fís. y nat. Habana, Anales, t. 62, pp. 95-113, 1925.
5. Informe sobre las canteras en la finca "La Viuda"; Cuba, Dirección de montes y minas, Bol. minas, no. 9, pp. 1-5, 1926.

Coryell, Horace Noble.

1. Parts of Pike and Adams Counties: Illinois State Geol. Survey, Bull. no. 40, pp. 69-95, 6 pls. (incl. maps), 2 figs., 1919.
2. Bryozoan faunas of the Stones River group of central Tennessee: Indiana Acad. Sci., Proc., 1919, pp. 261-340, 3 figs., 14 pls., 1921.
3. Some new Pennsylvanian Ostracoda: Jour. Paleontology, vol. 2, no. 2, pp. 87-94, 1 pl., June, 1928.
4. Some new Pennsylvanian Ostracoda: Jour. Paleontology, vol. 2, no. 4, pp. 377-381, 1 pl., December, 1928.

Coste, Eugene. See also Matteson, 2.

1. [The occurrence of oil in Alberta] (discussion): Am. Inst. Min. and Met. Eng., Bull. no. 148, pp. 718-719, April, 1919.
2. Natural gas and oil possibilities in Canada: Natural Gas, vol. 5, no. 1, pp. 24-25, 42, January, 1924.

Cottingham, Kenneth.

1. The origin of the caves at Put-in-Bay, Ohio: Ohio Jour. Sci., vol. 20, no. 2, pp. 38-42, 4 figs., December, 1919.
2. Subsurface conditions on portion of Arches Fork anticline [Roane and Calhoun counties, West Virginia] (with discussion): Am. Inst. Min. and Met. Eng., Trans., vol. 68, pp. 1138-1145, 4 figs., 1923; [preprint] no. 1115, 5 pp., 3 figs., January, 1922; [preprint] no. 1169, pp. 6-9, 1 fig., June, 1922 (discussion by David B. Reger); abstract, Mining and Metallurgy, no. 181, pp. 35-36, 1 fig., January, 1922.

Cottingham, Kenneth—Continued.

3. Outline of the general geology of Ohio as disclosed by deep drill tests: Nat. Petroleum News, vol. 18, no. 32, pp. 45, 46, 48, 3 figs., August 11, 1926.
4. Structural conditions in portions of eastern Ohio: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 9, pp. 945-958, 11 figs., September, 1927.

Cotton, Leo A.

1. Earthquake frequency, with special reference to tidal stresses in the lithosphere: Seismol. Soc. America, Bull., vol. 12, nos. 2 and 3, pp. 47-198, 11 figs., June-September, 1922.
2. Some fundamental problems of diastrophism and their geological corollaries with special reference to polar wanderings: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 3, pp. 886-888, 1921; Am. Jour. Sci., 5th ser., vol. 6, pp. 453-503, December, 1923.

Couser, C. W. See Dille, 4, 6.

Cowie, George S. See MacLeod, 2.

Cox, Ben B.

1. Oil possibilities of the Payson anticline, Adams County, Illinois: Illinois, State Geol. Survey, Press Bull. Ser., Illinois Petroleum no. 7, pp. 1-4, 2 figs. (maps), February 19, 1927.

Cox, E. P.

1. A method of assigning numerical and percentage values to the degree of roundness of sand grains: Jour. Paleontology, vol. 1, no. 3, pp. 179-183, 3 figs., December, 1927.

Cox, Flemin, W.

1. Pleistocene deposits in Lawrence County: Illinois State Acad. Sci., Trans., vol. 16, pp. 347-352, 1923.

Cox, Guy Henry, 1881-1922. See also Boericke, 1.

1. (and Dake, C. L., and Muilenburg, G. A.). Field methods in petroleum geology. 305 pp., 49 figs., 12 pls., New York, McGraw-Hill Book Company, 1921.

Crabb, E. D.

1. A fossil elephant of Oklahoma: Milwaukee, Pub. Mus., Yearbook, 1923, vol. 3, pp. 173-177, 3 figs., April 29, 1925.
2. The occurrence of *Bison occidentalis* in Oklahoma: Oklahoma Acad. Sci. (Univ. Oklahoma Bull., new ser., no. 322), Proc., vol. 4, p. 124, December 1, 1925.

Craddock, W. N.

1. The Ventura (Avenue) [oil] field [Ventura County], California: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 6, pp. 821-829, 1 fig., November-December, 1924.

Craig, Edward Hubert Cunningham.

1. Geophysical surveys as aids to the geologist: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, pp. 165-167, January-February, 1925.
2. On "kerogen": Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, p. 180, January-February, 1925.

Crampton, Theodore H. M.

1. Copper schist deposits of Arizona: Eng. and Min. Jour., vol. 107, p. 689, April 19, 1919.
2. The Silver Horn district, near Pioche, Nevada: Min. and Sci. Press, vol. 122, pp. 883-884, 2 figs., June 25, 1921.

Crane, Guy Walter.

1. Geological and mineralogical conditions prevailing in the Tintic district, Utah: Salt Lake Min. Rev., vol. 25, no. 10, pp. 13-14, August 30, 1923.
2. Notes on the geology of East Tintic [Utah County, Utah]: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1491, 15 pp., 3 figs., September, 1925; discussion, no. 1512, pp. 11-13, December, 1925; (with discussion), Trans., vol. 74, pp. 147-162, 3 figs., 1926; abstract, Mining and Metallurgy, vol. 6, no. 227, p. 571, November, 1925; Min. Jour., Phoenix, Ariz., vol. 10, no. 13, pp. 3-4, 18-19, November 30, 1926.

Crane, Walter Richard. See also Hull, 1.

1. The mining and preparation of manganese ores in Tennessee: Tennessee State Geol. Survey, Resources of Tennessee, vol. 9, no. 1, pp. 32-47, 5 figs., January, 1919.
2. Red iron ore mining methods in the Birmingham district [Alabama]: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1368, 33 pp., 20 figs., September, 1924; abstract, Mining and Metallurgy, vol. 5, no. 214, pp. 501-503, October, 1924.
3. Red iron ores and ferruginous sandstones of the Clinton formation in the Birmingham district, Alabama: U. S., Bur. Mines, Tech. Paper 377, 41 pp., 23 figs., 1926.
4. Development, mining, and handling of ore in folded and faulted areas, red iron ore mines, Birmingham district, Alabama: U. S., Bur. Mines, Tech. Paper 407, 27 pp., 27 figs., 1927.

Crawford, David J. See Lonsdale, 11.

Crawford, Arthur L.

1. Euhedral oligoclase of pericline habit from Medicine Bow Mountains, Wyoming: Am. Mineralogist, vol. 11, no. 9, pp. 239-246, 5 figs., September, 1926.

Crawford, Ralph Dixon.

1. (and Willson, K. M., and Perini, V. C.). Some anticlines of Routt County, Colorado: Colorado Geol. Survey, Bull. 23, 61 pp., 10 figs., 3 pls. (incl. map), 1920.
2. A contribution to the igneous geology of central Colorado: Am. Jour. Sci., 5th ser., vol. 7, pp. 365-388, 1 fig., May, 1924.
3. (and Gibson, Russell). Geology and ore deposits of the Red Cliff district, Colorado: Colorado Geol. Survey, Bull. 30, 89 pp., 15 figs., 3 pls. (incl. map), 1925.

Crawford, William P.

1. Weissite, a new mineral [from Colorado]: Am. Jour. Sci., 5th ser., vol. 13, pp. 345-346, April, 1927.

Cressey, George Babcock.

1. Notes on the sand dunes of northwestern Indiana: Jour. Geology, vol. 30, no. 3, pp. 248-251, April-May, 1922.

Cressey, George Babcock—Continued.

2. The Indiana sand dunes and shore lines of the Lake Michigan Basin: Geol. Soc. Chicago, Bull. no. 8, 80 pp., 5 figs., 20 pls., May, 1928; abstract, Chicago, Univ., Abstracts of Theses, Sci. Ser., vol. 1, pp. 267–270, October, 1925.

Creveling, J. G.

1. The peridotite of Presque Isle, Michigan; a study in serpentization: Am. Jour. Sci., 5th ser., vol. 12, pp. 515–521, December, 1926.

Crickmay, Colin Hayter. See also Hertlein, 3.

1. The discovery of the prosiphon in Cretaceous ammonites from California, with remarks upon the function of the organ: Am. Jour. Sci., 5th ser., vol. 9, pp. 229–232, 3 figs., March, 1925.
2. A note on two of Hyatt's Liassic ammonites: California Acad. Sci., Proc., 4th ser., vol. 14, no. 3, pp. 77–81, 1 pl., July 23, 1925.
3. A Pleistocene fauna from the southwestern mainland of British Columbia: Canadian Field-Naturalist, vol. 39, no. 6, pp. 140–141, September, 1925.
4. On *Beudanticeras breweri* and *Coloboceras stantoni*: Am. Jour. Sci., 5th ser., vol. 13, pp. 503–516, 10 figs., June, 1927.
5. The geology and paleontology of the Harrison Lake district, British Columbia, together with a general review of the Jurassic faunas and stratigraphy of western North America (abstract): Stanford Univ., Abstracts of Dissertations, 1924–1926, vol. 1, pp. 131–158, June, 1927.
6. Latest Jurassic and earliest Cretaceous (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 264, March 30, 1928.
7. Geology of Dead Man Island, California (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 303, May, 1928.
8. Delimitation of Jura and Trias sections in British Columbia (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 313, May, 1928.
9. The stratigraphy of Parson Bay, British Columbia: California, Univ., Pub., Dept. Geol. Sci., Bull., vol. 18, no. 2, pp. 51–70, 3 figs., 4 pls., map, December 29, 1928.

Crider, Albert Foster. See also Weller, 17.

1. The El Dorado, Arkansas, oil field and its relation to north Louisiana structures: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 3, pp. 193–198, May–June, 1922.
2. Relation of Upper Cretaceous to Eocene structures in Louisiana and Arkansas (with discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 4, pp. 379–383, July–August, 1923.
3. Volcanic ash in northern Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 4, pp. 524–525, July–August, 1924.
4. Deep Pine Island gas [northern Louisiana]: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, pp. 171–172, January–February, 1925.

Crider, H. D. See Kentucky Geological Survey.

Crocker, William.

1. Association of ores and dikes: Eng. Min. Jour.-Press, vol. 117, no. 1, p. 21, January 5; no. 5, p. 213, February 2, 1924.

Croneis, Carey G. See also Hubbard, G. D., 6.

1. New cephalopods from the Fayetteville shale [of Arkansas]: Harvard Coll., Mus. Comp. Zoology, Bull., vol. 67, no. 10, pp. 341-352, 2 pls., February, 1926.
2. Notes on *Cycloceras* and associated genera: Am. Jour. Sci., 5th ser., vol. 12, pp. 185-192, September, 1926.
3. Unusual Carboniferous cephalopods: Science, new ser., vol. 64, pp. 622-623, December 24, 1926.
4. Sharks from Fayetteville formation: Pan-Am. Geologist, vol. 47, no. 1, pp. 41-46, 1 pl., February, 1927.
5. Oil and gas possibilities in the Arkansas Ozarks: Am. Assoc. Petroleum Geologists, vol. 11, no. 3, pp. 277-297, 2 figs., March, 1927.

Crook, Alja Robinson, 1865-1930.

1. The composition and origin of Monk's Mound [St. Clair County, Illinois]: Illinois Acad. Sci., Trans., vol. 9, pp. 82-84 [1917].
2. Guide to the mineral collections in the Illinois State Museum. 294 pp., 31 pls., 236 figs., Springfield, Illinois, 1920.
3. The origin of the Cahokia mounds: Illinois State Mus., Bull., 26 pp., 22 figs., Springfield, May, 1922.
4. *Elephas primigenius boreus* Hay at Golconda, Illinois: Illinois State Acad. Sci., Trans., vol. 19, pp. 288-299, 1 fig., 8 pls., 1926.
5. *Elephas primigenius boreus* Hay in Illinois (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 137-138, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 67, February, 1927.

Crosby, Irving Ballard. See also Crosby, W. O., 4.

1. Former courses of the Androscoggin River: Jour. Geology, vol. 30, no. 3, pp. 232-247, 5 figs., April-May, 1922; abstract, Geol. Soc. America, Bull., vol. 33, no. 1, p. 121, March 31, 1922.
2. The earthquake risk in Boston: Boston Soc. Civil Eng., Jour., vol. 10, no. 10, pp. 421-430, 1 pl. (map), December, 1923.
3. The physiographic history of Pinkham Notch [White Mountains, New Hampshire]: Appalachia, vol. 15, no. 4, pp. 462-468, 1 pl., April 1924.
4. The danger of earthquakes in New England: Science, new ser., vol. 63, pp. 186-187, February 12, 1926.
5. Boston through the ages; the geological story of greater Boston. xvii, 166 pp., illus., Boston, Mass., Marshall Jones Company, 1928.
6. Potholes on Mount Jefferson [White Mountains, New Hampshire]: Appalachia, vol. 17, no. 1 (Bull. Appalachian Mountain Club, vol. 21, no. 10), pp. 44-45, June, 1898.
7. (and Leonardon, E. G.). Electrical prospecting applied to foundation problems: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 131, 12 pp., 13 figs., September, 1928.

Crosby, William Otis, 1850-1925.

1. Certain aspects of glaciation in Alaska (abstract): Geol. Soc. America, Bull., vol. 30, no. 1, p. 115, March 31, 1919.
2. Certain aspects of glacial erosion in Alaska (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 132, March 31, 1920.
3. Soils of Coos County [New Hampshire]: Boston Soc. Nat. Hist., Proc., vol. 37, no. 3, pp. 54-68, 1 fig., July, 1924.

Crosby, William Otis—Continued.

4. (and Crosby, Irving B.). Keystone faults: *Geol. Soc. America, Bull.*, vol. 36, no. 4, pp. 623–640, 1 fig., December, 1925; abstract, vol. 35, no. 1, p. 94, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 147, March, 1924.
5. Certain aspects of glacial erosion: *Geol. Soc. America, Bull.*, vol. 39, no. 4, pp. 1171–1181, December 30, 1928.

Cross, Julian Gifford.

1. Lake Shebandowan nickel deposit: *Ontario Dept. Mines, 29th Ann. Rept.*, vol. 29, pt. 1, pp. 225–234, 5 figs., 1920.
2. Pre-Cambrian rocks and iron ore deposits in the Abitibi-Mattagami area: *Ontario Bur. Mines, 29th Ann. Rept.*, vol. 29, pt. 2, pp. 1–18, 11 figs., map, 1920.
3. The Shebandowan nickel-copper deposits [Ontario]: *Canadian Min. Jour.*, vol. 43, no. 18, pp. 270–271, May 5, 1922.

Cross, (Charles) Whitman.

1. Geology in the World War and after: *Geol. Soc. America, Bull.*, vol. 30, no. 1, pp. 165–188, March 31, 1919.
2. Louis Valentine Pirsson: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 173–187, portr., September, 1920.
3. (and others). The Kilauea Volcano Observatory: *Nat Acad. Sci., Proc.*, vol. 6, no. 12, pp. 706–716, December 15, 1920.
4. Are the Lance and Fort Union formations of Mesozoic time?: *Science*, new ser., vol. 53, pp. 304–307, April 1, 1921.
5. Tertiary aspects of Lance beds: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 66–67, February, 1922.
6. Historical sketch of the landslides of Gaillard Cut [Panama Canal]: *Nat. Acad. Sci., Mem.*, vol. 18, pp. 23–43, 1924.
7. (and Shannon, Earl V.). The geology, petrography, and mineralogy of the vicinity of Italian Mountain, Gunnison County, Colorado: *U. S. Nat. Mus., Proc.* vol. 71, art. 18, 42 pp., 15 figs. (incl. map), 2 pls., 1927.

Crouse, Charles Stevens.

1. The oil shales of Estill County, Kentucky: *Eng. and Min. Jour.*, vol. 110, no. 1, pp. 24–27, July 3, 1920.
2. The precious metal content of the black Devonian shales of Kentucky: *Kentucky Geol. Survey*, ser. 6, vol. 21, pp. 49–58, 1925.
3. An economic study of the black Devonian shales of Kentucky: *Kentucky Geol. Survey*, ser. 6, vol. 21, pp. 59–97, 4 figs., 1925.
4. The intrastate industrial utilization of the mineral resources of Kentucky: *Kentucky Geol. Survey*, ser. 6, vol. 21, pp. 145–192, 1925.
5. Economic possibilities of eastern oil shales: *Min. Congress Jour.*, vol. 12, no. 3, pp. 166–169, 5 figs., March, 1926.

Crowell & Murray.

1. The iron ores of Lake Superior. Fourth edition, 301 pp., pls., maps, and figs., Cleveland, The Penton Press, 1920.

Crum, H. E. See Prommel, 2, 4.

Crump, Malcolm Hart, 1849–1925.

1. The Harvard summer school of geology [Cumberland Mountain, Kentucky, 1875]: *Science*, new ser., vol. 60, pp. 421–423, November 7, 1924.

Cudworth, James R.

1. Report of the geology and mineral resources of the Tennessee River district in Alabama, Georgia, and Mississippi: U. S., 70th Cong., 1st sess., H. R. Doc. no. 185, pp. 159-183, 1928.

Culbertson, Glenn.

1. Some evidence indicating the importance of frost action in widening valleys: Indiana Acad. Sci., Proc., 1920, pp. 247-248, 2 figs., 1921.

Culbertson, J. Archer.

1. Fauna of the Brassfield limestone of Jefferson County, Indiana: Indiana Acad. Sci., Proc., vol. 35, pp. 111-119, 1 pl., 1926.
2. Further observations of the erosion of Clifty and Butler Ravines, Jefferson County, Indiana: Indiana Acad. Sci., Proc., vol. 37, pp. 117-120, 2 figs., 1928.
3. Notes on some Ohio River terraces: Indiana Acad. Sci., Proc., vol. 37 pp. 120-123, 2 figs., 1928.

Culver, Harold Eugene.

1. The coal fields of southwestern Washington: Washington Geol. Survey, Bull. no. 19, 155 pp., 24 pls. (incl. maps), 12 figs., 1919.
2. Geology and mineral resources of the Morris quadrangle: Illinois State Geol. Survey, Bull. no. 43, pp. 95-204, 32 figs., 3 pls. (maps), 1923 (published as extract, 114 pp., in 1922).
3. Note on the occurrence of Fusulinas in the Pennsylvanian rocks of Illinois: Illinois State Acad. Sci., Trans., vol. 15, pp. 421-425 [1923].
4. Pennsylvanian correlation in northwestern Illinois: Geol. Soc. America, Bull., vol. 35, no. 2, pp. 321-328, 3 figs., June 30, 1924; abstract, no. 1, p. 116, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 157, March, 1924.
5. Preliminary report on coal-stripping possibilities in Illinois: Illinois State Geol. Survey, Cooperative Min. Ser., Bull. 28, 61 pp., 22 figs., 1925.
6. Coal resources of District III (western Illinois): Illinois State Geol. Survey, Cooperative Min. Ser., Bull. 29, 128 pp., 14 figs., 2 maps, 1925.
7. Geology and mineral resources of the Morris quadrangle: Chicago, Univ., Abstracts of Theses, Sci. Ser., vol. 1, pp. 271-276, October, 1925.
8. Correlation of Illinois coals (abstract): Pan-Am. Geologist, vol. 45, no. 3, pp. 253-254, April, 1926.
9. Present status of correlation of Illinois coals: Illinois, State Geol. Survey, Rept. Investigations, no. 14, 13 pp., 1927.
10. Abstract of the report [by Solon Shedd] on the geology and resources of the Pasco and Prosser quadrangles [Washington]: Washington, Dept. Conservation, Div. Geology, Reports of Investigations, no. 1, 4 pp. [mimeographed], map [1927?].
11. Mastodon remains in Washington: Science, new ser., vol. 66, pp. 540-541, December 2, 1927.
12. Biennial report of the supervisor of the division of geology: Washington, Dept. Conservation and Development, Third Biennial Rept., pp. 85-92, Olympia, 1927.
13. Biennial report of the supervisor of the division of geology: Washington, Dept. Conservation and Development, Fourth Bienn. Rept., pp. 68-75, 1928.

Cumings, Edgar Roscoe.

1. Nomenclature and description of the geological formations of Indiana. In Handbook of Indiana geology (Indiana, Dept. Conservation, Pub. no. 21), pp. 403-570, 31 figs. (incl. maps), Indianapolis, 1922.

Cumings, Edgar Roscoe—Continued.

2. The earth's framework [presidential address]: Indiana Acad. Sci., 41st Ann. Meeting, Proc., vol. 35, pp. 45-61, 1926.
3. (and Schrock, R. R.). The Silurian coral reefs of northern Indiana and their associated strata: Indiana Acad. Sci., Proc., vol. 36, pp. 71-85, 4 figs., 1927.
4. (and Shrock, Robert R.). Niagaran coral reefs of Indiana and adjacent States and their stratigraphic relations: Geol. Soc. America, Bull., vol. 39, no. 2, pp. 579-620, 12 figs., June, 1928; abstract, no. 1, p. 211, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, pp. 145-146, March, no. 3, p. 232, April, 1928.
5. (and Shrock, Robert R.). The geology of the Silurian rocks of northern Indiana: Indiana, Division of Geology, Conservation Comm., Pub. no. 75, 226 pp., 45 figs., maps and charts, 1928.

Cumming, Jorge.

1. Informe preliminar acerca de la geología y zonas petrolíferas de una parte de los estados de Coahuila y Nuevo León: Mexico, Inst. Geol., Foll. Divulgación, no. 20, 15 pp., 1926.
2. Informe preliminar acerca del reconocimiento geológico-petrolero, de la parte norte del estado de Coahuila: Mexico, Inst. Geol., Foll. Divulgación, no. 29, 29 pp., map, 1928.

Cundall, Frank.

1. Description of Jamaica, pp. 26-33, 1 pl. (geologic map). In The Handbook of Jamaica for 1923, Kingston, Government Printing Office, 1923.

Cunningham, C. M.

1. (and Hardy, Norman). Notes on geology and status of development of Seal Beach and Alamitos areas, California: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 8, pp. 870-873, August, 1927.

Cunningham, George M.

1. The Wheeler Ridge oil field [Kern County, California]; Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 5, pp. 495-501, 2 figs., May, 1926.
2. Were diatoms the chief source of California oil? (with discussion by Howard W. Kitson): Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 7, pp. 709-721, July, 1926.

Cuno, John B.

1. The mystery of a buried forest [in an excavation in Washington, D. C.]: Am. Forestry, vol. 29, pp. 105-106, 1 fig., February, 1923.

Currier, Louis Wade. See also Weller, S., 1.

1. Geology of northeastern Adams County: Illinois State Geol. Survey, Bull. no. 43, pp. 305-323, 4 figs., 2 pls. (maps), 1923 (published as extract, 23 pp., in 1922).
2. Fluorspar deposits of Kentucky; a description and interpretation of the geologic occurrence and industrial importance of Kentucky fluor-spar: Kentucky Geol. Survey, ser. 6, vol. 13, 198 pp., 41 figs., map, 1923.

Currier & Company.

1. New oil and geological map of Texas . . . Scale, 28 miles to 1 inch (about). Kansas City, Missouri, no date [1920?].

Cushing, Henry Platt, 1860-1921. See also Clarke, J. M., 15.

1. (and Newland, D. H.). Geology of the Gouverneur quadrangle: New York State Mus. Bull., no. 259, 122 pp., 16 figs., 14 pls., map, May, 1925.

Cushman, Joseph Augustine. See also Loughlin, 9.

1. Pliocene Foraminifera of the Coastal Plain of the United States (U. S. Geol. Survey, Bull. 676, 1918) (abstract by R. W. Stone): Washington Acad. Sci., Jour., vol. 9, no. 11, pp. 328-329, June 4, 1919.
2. The age of the underlying rocks of Florida as shown by the Foraminifera of well borings: Florida State Geol. Survey, Twelfth Ann. Rept., pp. 77-103, 1 fig., 1919.
3. Fossil Foraminifera from the West Indies: Carnegie Inst. Washington, Pub. no. 291, pp. 21-71, 15 pls., 8 figs., 1919.
4. Lower Cretaceous age of the limestones underlying Florida: Washington Acad. Sci., Jour., vol. 9, no. 3, pp. 70-73, February 4, 1919.
5. Value of Foraminifera in stratigraphic correlation (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 205, March 31, 1920.
6. Foraminiferal fauna of the Byram marl (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 215, March 31, 1920.
7. Some relationships of the foraminiferal fauna of the Byram calcareous marl [Hinds County, Mississippi]: Washington Acad. Sci., Jour., vol. 10, no. 7, pp. 198-201, April 4, 1920.
8. The American species of *Orthophragmina* and *Lepidocyclina*: U. S. Geol. Survey, Prof. Paper 125, pp. 39-105, 29 pls., 1 fig., July 26, 1920; abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 11, no. 8, p. 194, April 19, 1921.
9. Lower Miocene Foraminifera of Florida: U. S. Geol. Survey, Prof. Paper 128, pp. 67-74, 1 pl., August 12, 1920.
10. American species of *Operculina* and *Heterostegina* and their faunal relations: U. S. Geol. Survey, Prof. Paper 128, pp. 125-137, 4 pls., March 21, 1921. Abstract by C. Wythe Cooke, Washington Acad. Sci., Jour., vol. 11, no. 21, p. 511, December 19, 1921.
11. A new species of *Orthophragmina* [*advena*] from Louisiana: U. S. Geol. Survey, Prof. Paper 128, pp. 139-142, 1 pl., March 21, 1921.
12. Foraminifera from the deep wells of Florida: Florida State Geol. Survey, 13th Ann. Rept., pp. 33-70, 1 fig., 3 pls., 1921.
13. The Foraminifera of the Byram calcareous marl at Byram, Mississippi: U. S. Geol. Survey, Prof. Paper 129, pp. 87-122, 15 pls., March 17, 1922.
14. The Foraminifera of the Mint Spring calcareous marl member of the Marianna limestone: U. S. Geol. Survey, Prof. Paper 129, pp. 123-152, 7 pls., March 28, 1922.
15. Use of Foraminifera in determining underground structure, especially in petroleum mining (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 145-146, March 31, 1922.
16. The Foraminifera of the Vicksburg group: U. S. Geol. Survey, Prof. Paper 133, pp. 11-67, 8 pls., 1923.
17. (and Trager, Earl A.). New formation in the Tampico Embayment region (abstract, with discussion by Joseph T. Singewald, jr.): Geol. Soc. America, Bull., vol. 35, no. 1, p. 100, March 30, 1924; abstract, Pan-Am. Geologist, vol. 41, no. 2, p. 149, March, 1924.
18. The use of Foraminifera in geologic correlation: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 4, pp. 485-491, July-August, 1924.

Cushman, Joseph Augustine—Continued.

19. A new genus of Eocene Foraminifera: U. S. Nat. Mus., Proc., vol. 66, art. 30, 4 pp., 1 fig., 2 pls., January 23, 1925.
20. The genera *Pseudotextularia* and *Guembelina*: Washington Acad. Sci., Jour., vol. 15, no. 6, pp. 133-134, March 19, 1925.
21. An Eocene fauna from the Moctezuma River, Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 298-303, 3 pls., March-April, 1925.
22. Contributions from the Cushman Laboratory for Foraminiferal Research. Sharon, Massachusetts.

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 66. (and Jaris, P. W.) Cretaceous Foraminifera from Trinidad, pp. 85–103.
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 68. Fistulose species of *Gaudryina* and *Heterostomella*, pp. 107–112.
 69. (and Waters, James A.). *Hyperamminoides*, a new name for *Hyperamminella* Cushman and Waters, p. 112.
23. An introduction to the morphology and classification of the Foraminifera: Smithsonian Misc. Coll., vol. 77, no. 4, 77 pp., 16 pls., July 21, 1925.
24. (and Applin, E. R.). Texas Jackson Foraminifera; Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 2, pp. 154–189, 6 pls., February, 1926.
25. Foraminifera of the genera *Siphogenerina* and *Pavonina*: U. S. Nat. Mus., Proc., vol. 67, art. 25, 24 pp., 6 pls., March 9, 1926.
26. The Foraminifera of the Velasco shale of the Tampico embayment [San Luis Potosi, Mexico]: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 6, pp. 581–612, 7 pls., June, 1926.
27. Foraminifera of the genus *Ehrenbergina* and its species: U. S. Nat. Mus., Proc., vol. 70, art. 16, 8 pp., 2 pls., 1927.
28. Some paleontologic evidence bearing on a classification of the Foraminifera: Am. Jour. Sci., 5th ser., vol. 13, pp. 53–56, January, 1927.
29. (and Hanna, Marcus A.). Foraminifera from the Eocene near San Diego, California: San Diego Soc. Nat. Hist., Trans., vol. 5, no. 4, pp. 45–64, 3 pls., March 15, 1927.
30. Phylogenetic studies of the Foraminifera, Part I: Am. Jour. Sci., 5th ser., vol. 13, pp. 315–326, 2 figs., April, 1927.
31. The occurrence of *Lituonella* and *Coskinolina* in America: Washington Acad. Sci., Jour., vol. 17, no. 8, pp. 198–200, April 19, 1927.
32. (and Hanna, G. Dallas). Foraminifera from the Eocene near Coalinga, California: California Acad. Sci., Proc., 4th ser., vol. 16, no. 8, pp. 205–228, 2 pls., April 22, 1927.
33. Some Foraminifera from the Cretaceous of Canada: Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 127–132, May, 1927.
34. (and Grant, U. S., IV). Late Tertiary and Quaternary Elphidium of the west coast of North America: San Diego Soc. Nat. Hist., Trans., vol. 5, no. 6, pp. 69–82, 2 pls., July 28, 1927.
35. Description of Foraminifera: Jour. Paleontology, vol. 1, no. 1, pp. 13–14, July, 1927.
36. Some characteristic Mexican fossil Foraminifera: Jour. Paleontology, vol. 1, no. 2, pp. 147–172, 6 pls., August, 1927.
37. Foraminifera of the genus *Siphonina* and related genera: U. S. Nat. Mus., Proc., vol. 72, art 20, 15 pp., 4 pls., 1927.
38. Phylogenetic studies of the Foraminifera, Part II; Am. Jour. Sci., 5th ser., vol. 14, pp. 317–324, 1 pl., October, 1927.
39. Notes on Foraminifera in the collection of Ehrenberg: Washington Acad. Sci., Jour., vol. 17, no. 19, pp. 487–491, November 19, 1927.
40. The American Cretaceous Foraminifera figured by Ehrenberg: Jour. Paleontology, vol. 1, no. 3, pp. 213–217, 3 pls., December, 1927.
41. Foraminifera; their classification and economic use: Cushman Laboratory for Foraminiferal Research, Spec. Pub. no. 1, 401 pp., 59 pls., Sharon, Massachusetts, April, 1928.

Cushman, Joseph Augustine—Continued.

42. (and Waters, James A.). The development of *Climacamina* and its allies in the Pennsylvanian of Texas: Jour. Paleontology, vol. 2, no. 2, pp. 119-130, 4 pls., June, 1928.
43. Fossils; what they are and their uses to man: Sci. Monthly, vol. 27, no. 4, pp. 346-348, October, 1928.
44. (and Schenck, Hubert G.). Two foraminiferal fannules from the Oregon Tertiary: California, Univ., Dept. Geol. Sci., Bull., vol. 17, no. 9, pp. 305-324, 4 pls., November 3, 1928.
45. (and Waters, James A.). Upper Paleozoic Foraminifera from Sutton County, Texas: Jour. Paleontology, vol. 2, no. 4, pp. 358-371, 3 pls., December, 1928.

Custer, Clarence. See Cockerell, 28.

Dachnowski, Alfred Paul.

1. Correlation work in peat-land problems: Bot. Gazette, vol. 70, no. 6, pp. 453-458, December, 1920.
2. Peat deposits in the United States and their classification: Soil Science, vol. 10, no. 6, pp. 453-465, December, 1920.
3. Peat deposits and their evidence of climatic changes: Bot. Gazette, vol. 72, no. 2, pp. 57-89, 12 figs., August, 1921.
4. Profiles of peatlands within limits of extinct glacial lakes Agassiz and Wisconsin: Bot. Gazette, vol. 80, no. 4, pp. 345-366, 3 figs., December, 1925.
5. Profiles of peat deposits in New England: Ecology, vol. 7, no. 2, pp. 120-135, 2 figs., April, 1926.

Dahlblom, Th.

1. The permeability of rocks: Econ. Geology, vol. 19, no. 4, pp. 389-392, June-July, 1924.

Dahlgren, B. E.

1. A fossil flower [cycad]: Field Mus. Nat. Hist., Dept. Botany, Leaflet no. 5, 16 pp., 10 figs., 1924.

Dake, Charles Lawrence. See also Cox, G. H., 1.

1. The sand and gravel resources of Missouri: Missouri Bur. Geology and Mines, 2d ser., vol. 15, 274 pp., 47 pls., 2 figs., 1918.
2. Glacial features on the south side of Beartooth Plateau, Wyoming: Jour. Geology, vol. 27, no. 2, pp. 128-131, 1 fig., February-March, 1919.
3. The horizon of the marine Jurassic of Utah: Jour. Geology, vol. 27, no. 8, pp. 634-646, 10 figs. November-December, 1919.
4. The pre-Moenkopi (pre-Permian?) unconformity of the Colorado Plateau: Jour. Geology, vol. 28, no. 1, pp. 61-74, 8 figs., January-February 1920. Abstract, Science, new ser., vol. 51, p. 492, May 14, 1920.
5. Episodes in Rocky Mountain orogeny: Am. Jour. Sci., 5th ser., vol. 1, no. 13, pp. 245-254, March, 1921; abstract, Science, new ser., vol. 51, pp. 520-521, May 21, 1920.
6. The problem of the St. Peter sandstone; Missouri, Univ., School of Mines and Met., Bull., Tech. ser., vol. 6, no. 1, pp. 1-225, 30 pls., August 1921.
7. Derivation of the Peter sandstone: Pan-Am. Geologist, vol. 37, no. 3, pp. 244-245, April, 1922.
8. Taxonomic significance of Peter sandstone: Pan-Am. Geologist, vol. 37, no. 4, pp. 288-300, May, 1922.

Dake, Charles Lawrence—Continued.

9. Memorial of Guy H. Cox: Geol. Soc. America, Bull., vol. 34, no. 1, pp. 15-18, portr., March 30, 1923.
10. (and Bridge, Josiah). Subterranean stream piracy in the Ozarks: Missouri, Univ., School of Mines and Metallurgy, Bull., vol. 7, no. 1, pp. 3-14, 7 figs., 8 pls., November, 1923.
11. The scope of geologic teaching in mining engineering: Engineering Education, vol. 18, no. 8, pp. 527-536, 1923.
12. (and Brown, J. S.). Interpretation of topographic and geologic maps, with special reference to determination of structure. xi, 355 pp., 52 figs., New York, McGraw-Hill Book Company, 1925.
13. (and Bridge, Josiah). Early diastrophic events in the Ozarks (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 157-158, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, pp. 155-156, March, 1927.

Dale, Nelson Clark.

1. Provisional report of the areal and structural geology of the western flank of the Green Mountain Range: Vermont, State Geologist, 11th Rept., pp. 194-199 [1919].
2. Postglacial manganese in Columbia County, New York: New York State Mus. Bull., nos. 207, 208 (March-April, 1918), pp. 85-100, 5 figs., 1919.
3. Notes on the areal and structural geology of a portion of the western flank of the Green Mountain Range: Vermont, State Geologist Twelfth Rept., 1919-20, pp. 43-56, 7 figs., 1 pl., 1921.
4. The box vein of Lyonsdale, Lewis County, New York: New York State Mus. Bull. no. 251, pp. 134-148, 1 fig., 4 pls., 1924.
5. Pre-Cambrian and Paleozoic geology of Fortune Bay, Newfoundland: Geol. Soc. America, Bull., vol. 38, no. 2, pp. 411-430, 8 figs., June 30, 1927; abstract, vol. 37, no. 1, p. 155, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 159, March, 1926.

Dale, Thomas Nelson.

1. Practical geology of monumental stones: Monumental News, vol. 32, no. 10, pp. 764-765, no. 12, pp. 914-915, vol. 33, no. 1, pp. 42-44, no. 3, pp. 202-204, no. 4, pp. 272-273, 7 figs., October, December, 1919; January, March, April, 1920.
2. Local unconformity between the Berkshire schist and the Stockbridge limestone in Adams, Mass.: Am. Jour. Sci., 4th ser., vol. 49, pp. 369-371, May, 1920.
3. On concentric drag folding in Alabama marble: Am. Jour. Sci., 5th ser., vol. 2, pp. 319-321, 2 figs., December, 1921.
4. The commercial granites of New England: U. S. Geol. Survey, Bull. 738, 488 pp., 96 figs., 34 pls. (incl. maps), 1923.
5. The lime belt of Massachusetts and parts of eastern New York and western Connecticut: U. S. Geol. Survey, Bull. 744, 71 pp., 23 figs., 8 pls. (incl. maps), 1923.
6. Constitution and adaptation of the Holston marble of east Tennessee: Tennessee, Dept. Education, Div. Geology, Bull. 28, pp. 87-160, 10 figs., 15 pls., 1924.

Dall, William Healey, 1845-1927.

1. On some Tertiary fossils from the Pribilof Islands: Washington Acad. Sci., Jour., vol. 9, no. 1, pp. 1-3, January 4, 1919.

Dall, William Healey—Continued.

2. Pliocene and Pleistocene fossils from the Arctic coast of Alaska and the auriferous beaches of Nome, Norton Sound, Alaska: U. S. Geol. Survey, Prof. Paper 125, pp. 23-37, 2 pls., January 27, 1920. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 10, no. 11, p. 327, June 4, 1920.
3. Two new Pliocene pectens from Nome, Alaska: Nautilus, vol. 34, no. 3, pp. 76-77, January, 1921.
4. New fossil invertebrates from San Quentin Bay, Lower California: West American Scientist, vol. 19, no. 2, pp. 17-18, April 27, 1921.
5. New shells from the Pliocene or early Pleistocene of San Quentin Bay, Lower California: West American Scientist, vol. 19, no. 3, pp. 21-23, June 15, 1921.
6. Fossils of the Olympic Peninsula [Washington]: Am. Jour. Sci., 5th ser., vol. 4, pp. 305-314, October, 1922.
7. Note on the discovery of *Orygoceras* in the Idaho Tertiaries: Nautilus, vol. 37, no. 3, pp. 97-98, January, 1924.
8. Notes on molluscan nomenclature: Biol. Soc. Washington, Proc., vol. 37, pp. 87-90, February 21, 1924.
9. Report on Tertiary fossils from Brock River; Report on the Pleistocene fossils collected on the Arctic coast: Canadian Arctic Expedition, 1913-1918, Rept., vol. 11, pt. 4, pp. 27-28, 30-33, July 8, 1924.
10. Discovery of a Balkan fresh-water fauna in the Idaho formation of Snake River valley, Idaho: U. S. Geol. Survey, Prof. Paper 132, pp. 109-115, 1 pl., November 10, 1924.
11. Tertiary fossils dredged off the northeastern coast of North America: Am. Jour. Sci., 5th ser., vol. 10, pp. 213-218, September, 1925.

Daly, M. R. See Monte-Flores, 1,

Daly, Reginald Aldworth.

1. Report of the Sturgis Hooper professor of geology: Harvard Coll., Mus. Comp. Zoology, Ann. Rept. 1918-19, p. 13, 1919.
2. The coral-reef zone during and after the glacial period: Am. Jour. Sci., 4th ser., vol. 48, pp. 136-159, August, 1919.
3. Report of the Sturgis Hooper professor of geology; Report on the department of geology and geography: Harvard College, Mus. Comp. Zool., Ann. Rept., 1919-1920, pp. 15-19, 1920.
4. Changes of land and ocean levels (abstract): Washington Acad. Sci., Jour., vol. 10, no. 2, pp. 50-51, January 19, 1920.
5. The planetesimal hypothesis in relation to the earth: Sci. Monthly, vol. 10, no. 5, pp. 482-495, May, 1920.
6. A general sinking of sea level in recent time: Nat. Acad. Sci., Proc., vol. 6, no. 5, pp. 246-250, May 15, 1920.
7. Oscillations of level in the belts peripheral to the Pleistocene ice caps: Geol. Soc. America, Bull., vol. 31, no. 2, pp. 303-318, 1 pl., June 30, 1920; abstract, no. 1, pp. 111-112, March 31, 1920.
8. A recent world-wide sinking of ocean level: Geol. Mag., vol. 57, pp. 246-261, June, 1920. Abstract, Geol. Soc. America, Bull., vol. 31, no. 1, p. 112, March 31, 1920.
9. Report of the Sturgis Hooper professor of geology: Harvard College, Mus. Comp. Zool., Ann. Rept., 1920-1921, p. 12, 1921.
10. Postglacial changes of level in Newfoundland and Labrador (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 53, March 31, 1921.

Daly, Reginald Aldworth—Continued.

11. Postglacial warping of Newfoundland and Nova Scotia: *Am. Jour. Sci.*, 5th ser., vol. 1, pp. 381–391, 1 fig., May, 1921.
12. Earth's crust and its evolution (abstract with discussion by W. H. Hobbs, A. P. Coleman, and J. A. Udden): *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 61–62, March 30, 1923.
13. The earth's crust and its stability: *Am. Jour. Sci.*, 5th ser., vol. 5, pp. 349–371, May, 1923.
14. Decrease of the earth's rotational velocity and its geological effects: *Am. Jour. Sci.*, 5th ser., vol. 5, pp. 373–377, May, 1923.
15. A critical review of the Taylor-Wegener hypothesis (abstract): *Washington Acad. Sci., Jour.*, vol. 13, no. 20, pp. 447–448, December 4, 1923.
16. Earth's elastic and non-elastic deformation, caused by the waxing and waning of ice caps (abstract): *Pan-Am. Geologist*, vol. 42, no. 1, pp. 72–73, August, 1924.
17. Relation of mountain building to igneous action: *Am. Philos. Soc., Proc.*, vol. 64, no. 2, pp. 283–307, 3 figs., 1925; abstract, with title Mountain chain formation: *Science*, new ser., vol. 61, p. x, May 1, 1925.
18. Delevelings connected with glaciation and deglaciation (abstract): *British Assoc. Adv. Sci., Rept. 92d Meeting*, p. 384, 1925.
19. Pleistocene changes of level: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 281–313, October, 1925.
20. (and Palache, Charles, and Mather, Kirtley F.). Jay Backus Woodworth: *Science*, new ser., vol. 62, pp. 450–451, November 20, 1925.
21. Our mobile earth. 342 pp., 187 figs., New York, Charles Scribner's Sons, 1926.
22. Jay Backus Woodworth: *Seismological Soc. America, Bull.*, vol. 16, no. 1, pp. 43–44, March, 1926.
23. Earthquakes: *Boston Soc. Nat. Hist., Bull.*, no. 39, pp. 9–13, April, 1926.
24. The outer shells of the earth: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 108–135, February, 1928; correction, vol. 17, p. 279, March, 1929.
25. The effective moduli of elasticity in the outer earth-shells: *Gerlands Beiträge zur Geophysik*, Bd. 19, H. 2–3, pp. 194–209, 1928.
26. X-raying the earth: *Harvard Alumni Bull.*, vol. 31, no. 4, pp. 99–104, October 18, 1928.

Daly, William B.

1. (and others). Mining methods in the Butte district [including an account of the geology]: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1225, 55 pp., March, 1923; abstract, *Mining and Metallurgy*, vol. 4, no. 196, pp. 207–208, April, 1923.

Dana, Edward Salisbury.

1. Minerals and how to study them; a book for beginners in mineralogy. Second revised edition, 380 pp., 319 figs., New York, John Wiley & Sons [1921].
2. A textbook of mineralogy, with an extended treatise on crystallography and physical mineralogy. Third edition, revised and enlarged by William E. Ford. 720 pp., 1,050 figs., New York, John Wiley & Sons, 1922.
3. Biographical memoir George Jarvis Brush, 1831–1912: *Nat. Acad. Sci., Mem.*, vol. 17, pp. 105–112, portr., 1924.

Dane, Carl H. See also Dobbin, 5; U. S. Geol. Survey, 13.

1. (and Stephenson, L. W.). Notes on the Taylor and Navarro formations in east-central Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 1, pp. 41-58, 1 fig. (map), 1 pl., January, 1928.

Daneš, J. V.

1. Krasové jevy ve Spojených Státech Amerických [karst phenomenon in the United States]: České Akad. věd a Umění Rozpr., Třída 2, Roč. 35, Čís. 28, 3 pp., 1926.

Daniels, James I. See also Clark, S. K., 2.

Darling, S. M.

1. Notes on lignite; its characteristics and utilization: U. S. Bur. Mines, Tech. Paper 178, 16 pp., 1919.

Dart, J. Doris. See Schuchert, 29.

Darton, Nelson Horatio. See also Arizona Bur. Mines; Redwood, 1; Stone, 11.

1. Description of the Newell quadrangle, South Dakota: U. S. Geol. Survey, Geol. Atlas, Newell folio, no. 209, 7 pp., 6 figs., 3 maps, illus. sheet, 1919.
2. Description of the Syracuse and Lakin quadrangles, Kansas: U. S. Geol. Survey, Geol. Atlas, Syracuse-Lakin folio (no. 212), 10 pp., 7 figs., 6 maps, illus. sheet, 1920.
3. The Grand Canyon as an object lesson in geology: Wyoming Hist. and Geol. Soc., Proc. and Coll., vol. 17, pp. 1-20, 6 figs., 10 pls., 1920.
4. Geysers of Yellowstone National Park: Geologische Charakterbilder (K. Andree), Heft 23 [8 pp.], 1 fig., 6 pls., Berlin, 1920.
5. Artesian waters in the vicinity of the Black Hills, South Dakota (U. S. Geol. Survey, Water-Supply Paper 428, 1918) (abstract): Washington Acad. Sci., Jour., vol. 10, no. 7, p. 209, April 4, 1920.
6. Geothermal data of the United States, including many original determinations of underground temperature: U. S. Geol. Survey, Bull. 701, 97 pp., 3 figs., 1 pl. (map), 1920. Abstract by M. I. Goldman, Washington Acad. Sci., Jour., vol. 10, no. 18, p. 519, November 4, 1920.
7. Structure of some mountains in New Mexico (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 116, March 31, 1920.
8. Permian salt deposits of the south-central United States: U. S. Geol. Survey, Bull. 715, pp. 205-223, 10 figs., 4 pls. (incl. map), April 28, 1921. Abstract by M. I. Goldman, Washington Acad. Sci., Jour., vol. 11, no. 19, pp. 470-471, November 19, 1921.
9. Badlands of South Dakota and Nebraska: Geologische Charakterbilder (K. Andree), Heft 25 [7 pp.], 2 figs., 6 pls., Berlin, 1921.
10. Geologic reconnaissance in Baja California: Jour. Geology, vol. 29, no. 8, pp. 720-748, 22 figs., November-December, 1921.
11. Geologic structure of parts of New Mexico: U. S. Geol. Survey, Bull. 726, pp. 173-275, 33 figs., 21 pls. (incl. maps), March 31, 1922.
12. Grand Canyon of the Colorado River: Geologische Charakterbilder (K. Andree) Heft 30 [16 pp.], 3 figs., 10 pls., Berlin, 1924.
13. (and others). Geologic map of the State of Arizona, prepared by the Arizona Bureau of Mines in cooperation with the U. S. Geological Survey. Scale 1:500,000. 1924.

Darton, Nelson Horatio—Continued.

14. (and Paige, Sidney). Description of the central Black Hills [with contributions by J. D. Irving]: U. S. Geol. Survey, Geol. Atlas U. S., Central Black Hills folio (no. 219), 34 pp., 40 figs., 7 maps, section and 2 illustrations sheets, 1925.
15. Structural features of New Mexico and Arizona (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 163, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 156, March, 1925.
16. Topographic and geologic maps of Arizona and New Mexico (abstract): Pan-Am. Geologist, vol. 43, no. 5, p. 364, June, 1925.
17. A résumé of Arizona geology: Arizona, Univ., Arizona Bur. Mines, Bull. no. 119 (geol. ser. no. 3), 298 pp., 105 figs. (incl. maps), 128 pls. (incl. maps), October 15, 1925.
18. Geology of the Guantánamo Basin, Cuba: Washington Acad. Sci., Jour., vol. 16, no. 12, pp. 324–333, 5 figs. (incl. map), June 19, 1926.
19. (and Reeside, J. B., jr.). Guadalupe group: Geol. Soc. America, Bull., vol. 37, no. 3, pp. 413–428, 4 figs., 6 pls. (incl. map), September 30, 1926; abstract, no. 1, pp. 155–156, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 159, March, 1926.
20. The Permian of Arizona and New Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 9, pp. 819–852, 10 figs., September, 1926.
21. The red sandstones of New Mexico: U. S., 70th Cong. 1st sess., Sen. Doc. no. 18 (New Mexico State memorial stone), pp. 22–23, 1928.
22. Memorial of William Libbey: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 35–40, portr., March 30, 1928.
23. Memorial of Charles Doolittle Walcott: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 80–116, portr., March 30, 1928.
24. Tectonics of Arizona and New Mexico (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 182, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 141, March, 1928.
25. Geologic map of New Mexico: U. S. Geol. Survey, 1928. Scale 1:500,000.
26. "Red Beds" and associated formations in New Mexico; with an outline of the geology of the State: U. S. Geol. Survey, Bull. 794, 356 pp., 173 figs., 62 pls. (incl. maps), 1928.

Davenport, Frank B.

1. Virginia anthracite [Pulaski, Wythe, Montgomery, and Roanoke counties]: Mining and Metallurgy, vol. 4, no. 203, p. 554, November, 1923.

Davey, Wheeler P. See Fairbanks, 12.

Davidson, Pirie.

1. A cestraciont spine from the middle Triassic of Nevada: California, Univ., Dept. Geology, Bull., vol. 11, no. 4, pp. 433–435, 2 figs., May 9, 1919.
2. *Alticamelus alexandrae*, a new camel from the Barstow upper Miocene of the Mohave Desert: California, Univ., Dept. Geol. Sci., Bull., vol. 14, no. 12, pp. 397–408, 16 figs., November 20, 1923.

Davidson, S. C. See also Graton, 1.

1. The hiddenite occurrence in North Carolina: Am. Mineralogist, vol. 12, no. 8, pp. 305–307, August, 1927.

Davies, D. James.

1. Mining and metallurgy in Newfoundland: Inst. Min. and Met., Bull., no. 243, 8 pp., December, 1924.

Davies, Stanley J.

1. Western Canada [petroleum in 1924]: Inst. Petroleum Technologists, Jour. vol. 11, no. 51, pp. 417-419, August, 1925.

Davis, Angus W.

1. The Dolly Varden mine, Alice Arm, British Columbia: Canadian Min. Inst., Monthly Bull. no. 94, pp. 159-161, February, 1920.
2. British Columbia mineral survey district no. 3 and the Pacific Great Eastern Railway: Canadian Inst. Min. and Met., Bull., no. 160, pp. 809-811, August, 1925; Trans., vol. 28, pp. 398-400 [1926].

Davis, Charles Wesley. See also Lind, 1.

1. The composition and age of uranium minerals from Katanga, South Dakota, and Utah: Am. Jour. Sci., 5th ser., vol. 11, pp. 201-217, March, 1926.
2. (and Vacher, H. C.). Bentonite, its properties, mining, preparation, and utilization: U. S., Bur. Mines, Tech. Paper 439, 51 pp., 1 fig., 1928.

Davis, Darrell Haug.

1. The geography of the Jackson Purchase: Kentucky Geol. Survey, ser. 6, vol. 9, 185 pp., 32 figs., 68 pls., 1923.
2. The geography of the mountains of eastern Kentucky: Kentucky Geol. Survey, ser. 6, vol. 18, 180 pp., 21 figs., 58 pls., 1924.
3. The geography of the Blue Grass region of Kentucky: Kentucky Geol. Survey, ser. 6, vol. 23, 215 pp., 7 figs., 57 pls., 1927.

Davis, Elmer Fred.

1. The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1917, to March 31, 1918: California, Univ., Seismographic Stations, Bull. no. 15, pp. 325-338, August 7, 1919.
2. The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1918, to September 30, 1918: California, Univ., Seismographic Stations, Bull. no. 16, pp. 339-355, April 10, 1920.
3. The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1918, to March 31, 1919: California, Univ., Seismographic Stations, Bull., no. 17, pp. 357-370, April 21, 1920.
4. The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1919, to September 30, 1919: California, Univ., Seismographic Stations, Bull., no. 18, pp. 371-385, April 21, 1920.

Davis, H. R.

1. The new Romney [Ontario] oil well: Canadian Inst. Min. and Met., Monthly Bull. no. 145, pp. 286-298, 1 fig., May, 1924.

Davis, Hubert W. See Burchard, 13, 15, 16, 21, 22.

Davis, N. B.

1. Feldspar in the Ottawa district: Canadian Inst. Min. and Met., Monthly Bull. no. 118, pp. 229-235, 4 figs., February, 1922.

Davis, R. N.

1. An ancient tree [vertical tree trunk in coal near Scranton, Pennsylvania]: Nature Mag., vol. 10, no. 5, p. 299, November, 1927.

Davis, R. O. E. See Twenhofel, 16, 18, 22, 29.

Davis, Watson.

1. The story of copper. 385 pp., illus., New York, The Century Co. [1924].
2. Notes on the Santa Barbara earthquake: *Science*, new ser., vol. 62, pp. x, xii, July 10, 1925.
3. Science Service and the location of earthquake epicenters: *Seismol. Soc. America, Bull.*, vol. 16, no. 1, pp. 41-42, March, 1926; *Science*, new ser., vol. 63, p. 426, April 23, 1926.
4. (and Stockley, James). Seismology, the public, and Science Service (abstract): *Seismol. Soc. America, Bull.*, vol. 16, no. 2, pp. 155-157, June, 1926.

Davis, William Morris. See also Brown, C. W., 1; Cleland, 6; Foye, 5; Meinzer, 5; Osborn, 19; Schuchert, 20; Woodworth, 1.

1. The geological aspects of the coral-reef problem: *Science Progress*, vol. 13, no. 51, pp. 420-444, 3 figs., January, 1919.
2. The framework of the earth: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 225-241, September, 1919; (abstract), *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 110, March 31, 1920.
3. Features of glacial origin in Montana and Idaho: *Assoc. Am. Geographers, Annals*, vol. 10, 16 figs., pp. 75-147 [1921?].
4. Lower California and its natural resources; a review: *Geog. Rev.*, vol. 11, no. 4, pp. 551-562, October, 1921.
5. Faults, underdrag, and landslides of the Great Basin ranges: *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 92-96, 2 figs., March 31, 1922.
6. Deflection of streams by earth rotation: *Science*, new ser., vol. 55, pp. 478-479, May 5, 1922.
7. Geological overthrusts and underdrags (abstract): *Science*, new ser., vol. 55, p. 493, May 5, 1922.
8. Peneplains and the geographical cycle: *Geol. Soc. America, Bull.*, vol. 33, no. 3, pp. 587-598, September 30, 1922.
9. Topographical maps of the United States: *Sci. Monthly*, vol. 15, no. 6, pp. 557-560, December, 1922.
10. Memoir of Frederic Putnam Gulliver: *Assoc. Am. Geographers, Annals*, vol. 11, pp. 112-116 [1922?].
11. The cycle of erosion and the summit level of the Alps: *Jour. Geology*, vol. 31, no. 1, pp. 1-41, January-February, 1923.
12. Drowned coral reefs south of Japan: *Nat. Acad. Sci., Proc.*, vol. 9, no. 2, pp. 58-62, February, 1923.
13. The marginal belts of the coral seas: *Nat. Acad. Sci., Proc.*, vol. 9, no. 8, pp. 292-296, August, 1923.
14. The depth of coral-reef lagoons: *Nat. Acad. Sci., Proc.*, vol. 9, no. 8, pp. 296-301, August, 1923.
15. The marginal belts of the coral seas: *Am. Jour. Sci.*, 5th ser., vol. 6, pp. 181-195, September, 1923.
16. The island of Oahu: *Jour. Geography*, vol. 22, no. 9, pp. 354-357, 3 figs., December, 1923.
17. Notes on coral reefs: *Pan-Pacific Sci. Cong., Australia, 1923, Proc.*, vol. 2, pp. 1161-1163 [1924].
18. The formation of the Lesser Antilles: *Nat. Acad. Sci., Proc.*, vol. 10, no. 6, pp. 205-211, June 15, 1924.
19. A tilted-up, beveled-off atoll: *Science*, new ser., vol. 60, pp. 51-56, 2 figs., July 18, 1924; abstract, vol. 59, p. 544, May 16, 1924; *Pan-Am. Geologist*, vol. 42, no. 1, p. 74, August, 1924; *British Assoc. Adv. Sci., Rept. 92d Meeting*, p. 385, 1925.

Davis, William Morris—Continued.

20. Modification of Darwin's theory of coral reefs by the glacial-control theory (abstract): *Pan-Am. Geologist*, vol. 42, no. 1, pp. 73-74, August, 1924; *British Assoc. Adv. Sci.*, Rept. 92d Meeting, pp. 384-385, 1925.
21. Gilbert's theory of laccoliths (abstract): *Washington Acad. Sci., Jour.*, vol. 14, no. 15, p. 375, September 19, 1924.
22. Shaded topographic maps: *Science*, new ser., vol. 60, pp. 325-327, October 10, 1924.
23. Classification of oceanic islands (abstract): *Pan-Am. Geologist*, vol. 42, no. 4, p. 319, November, 1924; *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 216-217, March 30, 1926.
24. The progress of geography in the United States: *Assoc. Am. Geographers, Annals*, vol. 14, no. 4, pp. 159-215, December, 1924.
25. A Roxen lake in Canada [Lake Timiskaming]: *Scottish Geog. Mag.*, vol. 41, no. 2, pp. 65-74, 2 figs., March 16, 1925.
26. The Basin Range problem: *Nat. Acad. Sci., Proc.*, vol. 11, no. 7, pp. 387-392, 2 figs., July 15, 1925.
27. Laccoliths and sills (abstract with discussion): *Washington Acad. Sci., Jour.*, vol. 15, no. 18, pp. 414-415, November 4, 1925; *Bull. volcanologique*, 2^e ann., nos. 5-6, pp. 323-324, 1925.
28. Biographical memoir of Grove Karl Gilbert, 1843-1918; *Nat. Acad. Sci., Mem.*, vol. 21, 5th mem., 303 pp. 18 figs. and pls. (incl. portraits). 1926.
29. The Lesser Antilles: *Am. Geog. Soc., Map of Hispanic America*, Pub. no. 2, 207 pp. 66 figs., 16 pls., 1926.
30. Subsidence rate of reef-encircled islands: *Nat. Acad. Sci., Proc.*, vol. 12, no. 2, pp. 99-105, 2 figs., February, 1926.
31. Origin of the Lesser Antilles (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 220-221, March 30, 1926.
32. The value of outrageous geological hypotheses: *Science*, new ser., vol. 63, pp. 463-468, May 7, 1926.
33. The rifts of southern California: *Am. Jour. Sci.*, 5th ser., vol. 13, pp. 57-72, 6 figs., January, 1927.
34. Channels, valleys, and intermont plains: *Science*, new ser., vol. 66, pp. 272-274, September 23, 1927.
35. The coral-reef problem: *Am. Geog. Soc., Spec. Pub.* no. 9, 596 pp., 227 figs. and pls., New York, 1928.
36. The formation of coral reefs: *Sci. Monthly*, vol. 27, no. 4, pp. 289-300, 6 figs., October, 1928.
37. Die Entstehung von Korallenriffen: *Gesell. Erdkunde Berlin, Zeitschr.* 1928, no. 9-10, pp. 359-391, 13 figs., 1928.

Davis, William T.

1. (and Leng, Charles W.). Cretaceous fossils from Staten Island [New York]: *Staten Island Inst. Arts and Sci., Proc.*, vol. 4, pts. 1-3, pp. 47-50, 2 pls., August 18, 1927.

Davison, Charles.

1. On scales of seismic intensity and on the construction and use of isoseismal lines: *Seismol. Soc. America, Bull.*, vol. 11, no. 2, pp. 95-129, 3 figs., June, 1921.
2. Notes on some seismological terms: *Seismol. Soc. America, Bull.*, vol. 14, no. 1, pp. 26-37, March, 1924.
3. Twin earthquakes: *Jour. Geology*, vol. 35, no. 6, pp. 507-526, 7 figs., August-September, 1927.

Davy, William Myron. See also Lindgren, 11.

1. (and Farnham, C. Mason). Microscopic examination of ore minerals. 154 pp., New York, McGraw-Hill Book Co., 1920. Review by H. E. Merwin, *Econ. Geology*, vol. 15, no. 7, pp. 618-619, November, 1920. Review by E. T. Wherry, *Am. Mineralogist*, vol. 5, no. 8, pp. 152-154, August, 1920.
2. A reflecting microscope for the mining engineer: *Mining and Metallurgy*, no. 163, pp. 30-31, 1 fig., July, 1920 (abstract); *Am. Inst. Min. and Met. Eng., Trans.* [preprint no 996], 7 pp., 2 figs., 1920.

Dawson, C. B.

1. Lead-zinc deposits near Great Slave Lake, Northwest Territory: *Canadian Min. Jour.*, vol. 43, no. 23, p. 358, June 9, 1922.

Dawson, J. Chesley.

1. Oil shales: *Canadian Inst. Min. and Met., Bull.*, no. 153, pp. 26-59, 4 figs., January, 1925.

Dawson, J. M.

1. (and Hanna, Marcus, and Kirby, Grady). Igneous dikes in Bandera County, Texas: *Econ. Geology*, vol. 22, no. 6, pp. 621-624, 1 fig., September-October, 1927.

Day, Arthur Louis. See also Allen, E. T., 4.

1. Geophysical laboratory [report of the director]: *Carnegie Inst. Washington, Year Book* no. 17, pp. 127-138, February, 1919; no. 19, pp. 159-177, January, 1921; no. 20, 1921, pp. 157-174, February, 1922; no. 21, 1922, pp. 127-150, January, 1923; no. 22, pp. 127-147, February, 1924; no. 23, pp. 53-65, December, 1924; no. 24, pp. 51-69, December, 1925; no. 25, 1925-6, pp. 61-86, December, 1926; no. 26, 1926-7, pp. 63-79, December, 1927; no. 27, 1927-8, pp. 71-87, December, 1928.
2. George Ferdinand Becker: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 242-245, September, 1919.
3. Memorial of George Ferdinand Becker: *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 14-25, port., March 31, 1920.
4. Cooperative studies of California earth movements (abstract): *Science*, new ser., vol. 55, pp. 492-493, May 5, 1922.
5. Possible causes of the volcanic activity at Lassen Peak [California]: *Seismol. Soc. America, Bull.*, vol. 12, nos. 2 and 3, pp. 35-46, 2 pls., June-September, 1922; *Franklin Inst., Jour.*, vol. 194, no. 5, pp. 569-582, 1 fig., November, 1922.
6. (and others). Preliminary report of advisory committee in seismology: *Carnegie Inst. Washington, Year Book* no. 20, 1921, pp. 175-178, February, 1922.
7. (and others). Seismology; report of the advisory committee: *Carnegie Inst. Washington, Year Book* no. 21, 1922, pp. 390-394, January, 1923. *Seismol. Soc. America, Bull.*, vol. 12, no. 4, pp. 231-237, December, 1922.
8. (and others). Report of the advisory committee on seismology of the Carnegie Institution of Washington: *Seismol. Soc. America, Bull.*, vol. 13, no. 4, pp. 159-169, December, 1923; *Carnegie Inst. Washington, Year Book* no. 22, pp. 362-368, 1924.
9. The year's progress in volcanology: *Nat. Research Council, Bull.*, vol. 7, pt. 5, no. 41, pp. 71-73, January, 1924.
10. The volcano Kilauea in action (abstract): *Kentucky Acad. Sci., Trans.*, vol. 1, pp. 51-56, 2 pls., 1924.

Day, Arthur Louis—Continued.

11. (and Allen, E. T.). The sources of the heat and the source of water in the hot springs of the Lassen National Park: *Jour. Geology*, vol. 32, no. 3, pp. 178-190, April-May, 1924.
12. Hot springs and fumaroles of "The Geysers" region, California: *Jour. Geology*, vol. 32, no. 6, pp. 459-460, August-September, 1924.
13. (and Willis, Bailey). Cooperation in seismology: *Science*, new ser., vol. 60, pp. 217-218, September 5, 1924.
14. (and others). Report of the advisory committee on seismology of the Carnegie Institution of Washington: *Seismol. Soc. America, Bull.*, vol. 14, no. 3, pp. 201-212, September, 1924; *Carnegie Inst. Washington, Year Book*, no. 23, pp. 306-313, December, 1924.
15. (and Allen, E. T.). The volcanic activity and hot springs of Lassen Peak [California]. 190 pp., 81 figs., 13 pls., Carnegie Inst. Washington, Pub. no. 360, April, 1925.
16. The study of earth movements in California: *Science*, new ser., vol. 61, pp. 323-328, March 27, 1925.
17. Some causes of volcanic activity: *Bull. volcanologique*, 2^e ann., nos. 5-6, pp. 216-233, 1925; *Smithsonian Inst., Ann. Rept.*, 1925, pp. 257-270, 3 pls., 1926.
18. Gases in volcanic activity (abstract with discussion): *Washington Acad. Sci. Jour.*, vol. 15, no. 18, pp. 415-416, November 4, 1925; *Bull. volcanologique*, 2^e ann., nos. 5-6, pp. 325-327, 1925.
19. (and others). Seismology; report of the advisory committee: Carnegie Inst. Washington, Year Book no. 24, pp. 370-380, December, 1925; *Seismol. Soc. America, Bull.*, vol. 16, no. 1, pp. 45-60, March, 1926.
20. Santa Barbara earthquake (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 143, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 1, p. 91, February, 1926.
21. Difficulties in the study of local earth movements: *Washington Acad. Sci., Jour.*, vol. 16, no. 9, pp. 250-254, 1 fig., May 4, 1926.
22. (and others). Seismology; report of the advisory committee: Carnegie Inst. Washington, Year Book no. 25, 1925-6, pp. 415-435, December, 1926; *Seismol. Soc. America, Bull.*, vol. 17, no. 1, pp. 25-48, March, 1927.
23. Reports of progress in seismological work in the United States; A, Carnegie Institution of Washington: *Nat. Research Council, Bull.* no. 61, pp. 72-74, July, 1927.
24. (and others). Seismology; report of the advisory committee: Carnegie Inst. Washington, Yearbook no. 26, pp. 385-389, December, 1927; no. 27, pp. 410-421, December, 1928.
25. The year's volcanological publications (abstract): *Washington Acad. Sci., Jour.*, vol. 18, no. 19, pp. 510-511, November 19, 1928.
26. Further study of volcano gases (abstract): *Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc.*, p. 710, 1928.

Day, David Talbot, 1859-1925.

1. A handbook of the petroleum industry. Vol. 1, 964 pp., vol. 2, 1006 pp., illus., New York, John Wiley & Sons, 1922.

Dean, Bashford.

1. Charles Rochester Eastman: *Science*, new ser., vol. 49, pp. 139-141, February 7, 1919.
2. Memoir of Charles Rochester Eastman: *Geol. Soc. America, Bull.*, vol. 30, pp. 27-36, portr., March 31, 1919.

Dean, Bashford—Continued.

3. Dr. Moodie's opisthotonos: *Science*, new ser., vol. 49, p. 357, April 11, 1919.

Dean, David. See Snow, 1.

Deatrick, E. P.

1. Principles of soil classification: *West Virginia Acad. Sci., Proc.*, vol. 1, no. 1 (*W. Va. Univ. Bull.*, ser. no. 27, no. 1), pp. 48-51, August, 1926.

De Beque, G. Robert.

1. Oil shales of DeBeque, Colorado: *Eng. and Min. Jour.*, vol. 109, pp. 348-353, 3 figs. January 31, 1920.

Decker, Charles Elijah. See also Gould, C. N., 9.

1. Studies in minor folds. 89 pp., 44 figs., 3 pls., University of Chicago Press, Chicago, Illinois, September, 1920.
2. Preliminary notes on a new geologic map of the Arbuckle Mountains of Oklahoma: *Oklahoma Acad. Sci., Proc.*, vol. 3 (*Oklahoma, Univ., Bull.*, new ser. no. 271), pp. 91-94, October 1, 1923.
3. A preliminary list giving the distribution of Proboscidea in Oklahoma: *Oklahoma Acad. Sci. (Univ. Oklahoma Bull.*, new ser., no 322), *Proc.*, vol. 4, pp. 123-124, December 1, 1925.
4. Transverse structural features of Arbuckle Mountains [Oklahoma] (abstract): *Pan-Am. Geologist*, vol. 45, no. 3, pp. 254-255, April 1926.
5. Transverse structures in Arbuckle Mountains of Oklahoma: *Pan-Am. Geologist*, vol. 46, no. 3, pp. 189-192, October, 1926.
6. Some new fossil algal horizons in the Arbuckle Mountains: *Oklahoma Acad. Sci., Proc.*, vol. 6, pt. 2, 1926 (*Oklahoma, Univ., Bull.*, new ser. no. 348), pp. 260-262, 2 figs., January 1, 1927.
7. Stuart Weller: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 12, pp. 1347-1348, December, 1927.
8. (and Merritt, Clifford A.). Physical characteristics of the Arbuckle limestone: *Oklahoma Geol. Survey, Circ.* no. 15, 56 pp., 1 fig., 5 pls., January, 1928.
9. The correlation of rocks by means of microscopic fossils: *Oklahoma Acad. Sci., Proc.*, vol. 7 (*Oklahoma, Univ., Bull.*, new ser., no 409), pp. 171-176 [1928].

Decker, LaVerne.

1. Structural trends in southern Oklahoma: *Oklahoma Geol. Survey, Bull.* no. 40-P, 13 pp., 1 pl. (map), July, 1927; *Bull.* 40, vol. 1, pp. 69-77, July, 1928.

Deeds, John F.

1. (and White, Walter N.). Water power and irrigation in the Madison River basin Montana: *U. S. Geol. Survey, Water-Supply Paper* 560, pp. 1-30, 2 figs., January 26, 1925.
2. (and White, Walter N.). Water power and irrigation in the Jefferson River basin, Montana: *U. S. Geol. Survey, Water-Supply Paper* 580, pp. 41-113, map, December 14, 1926.

De Ford, Ronald K.

1. Areal geology of Cimarron County, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 7, pp. 753-755, July, 1927.

De Geer, Gerard.

1. On the determination of geochronology by a study of laminated deposits: *Science*, new ser., vol. 52, pp. 502-503, November 26, 1920.
2. Correlation of late glacial clay varves in North America with the Swedish time scale: *Geol. Fören. i Stockholm, Förhandl.*, Bd. 43, H. 1-2, pp. 70-73, 1 fig., January-February, 1921.
3. Om Nordamerikas Kvartärgeologi belyst av dem svenska tidsskalen [American glacial deposits referred to Swedish time scale]: *Geol. Fören. i Stockholm, Förhandl.*, Bd. 43, H. 5, pp. 497-499, May, 1921.
4. On the solar curve as dating the ice age, the New York moraine, and Niagara Falls through the Swedish time scale: *Geografiska Annaler*, Arg. 8, H. 4 (Stockholms Högskolas Geokronol. Inst., Data 9), pp. 253-284, 3 pls., 1926. Translation by G. Steinmann, *Schwankungen der Sonnenstrahlung seit 18,000 Jahren*: *Geol. Rundschau*, Bd. 18, H. 6, pp. 417-454, 1 fig., January, 1928.
5. Om New York-moränens verkliga ålder och betydelse [on the actual age and significance of the New York moraine]: *Geol. Fören. i Stockholm, Förh.*, Bd. 48, H. 2, pp. 143-148, March-April, 1926.
6. Geochronology as based on solar radiation: *Science*, new ser., vol. 66, pp. 458-460, November 11, 1927; corrections, vol. 67, p. 240, March 2, 1928.

DeGolyer, Everette Lee. See also Ambrose, 1; Matteson, 2; Ordóñez, 2; Washburne, 3.

1. The West Point, Texas, salt dome, Freestone County: *Jour. Geology*, vol. 27, no. 8, pp. 647-663, 2 figs., November-December, 1919.
2. Theory of volcanic origin of salt domes (with discussion by J. A. Udden and E. T. Dumble): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 61, pp. 456-477, 1920.
3. Zacamixtle [oil] pool, Mexico: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, p. 85, January-February, 1921.
4. Debt of geology to the petroleum industry: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 3, pp. 394-398, May-June, 1921.
5. On the estimating of petroleum reserves: *Econ. Geology*, vol. 17, no. 1, pp. 40-45, January-February, 1922.
6. Cooperation in geology: *Econ. Geology*, vol. 18, no. 1, pp. 83-86, January-February, 1923.
7. Notes on the salt domes of North America (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 66, March 30, 1923.
8. What is an economic geologist?: *Econ. Geology*, vol. 19, no. 4, pp. 473-474, August, 1924.
9. The occurrence of vanadium and nickel in petroleum (with discussion by G. Steiger, E. T. Erickson, F. L. Nason, and D. F. Hewett): *Econ. Geology*, vol. 19, no. 6, pp. 550-558, September-October, 1924.
10. The geologist and the petroleum industry: *Am. Petroleum Inst. Bull.*, vol. 5, no. 75, pp. 24-27, December 31, 1924.
11. The geologist and the petroleum industry: *Nat. Petroleum News*, vol. 16, no. 51, pp. 45, 46, 48, December 17, 1924; *Oil Engineering and Finance*, vol. 6, no. 105, pp. 24-26, January, 1925.
12. Discovery by geophysical methods of a new salt dome in the Gulf coast (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 161, March 30, 1925; *Pan.-Am. Geologist*, vol. 43, no. 2, March, 1925.
13. State geological surveys and economic geology: *Econ. Geology*, vol. 20, no. 4, pp. 376-381, June-July, 1925.

DeGolyer, Everette Lee—Continued.

14. Discovery of potash salts and fossil algae in Texas salt dome [Markham, Texas]: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 348–349, March–April, 1925; Geology of salt dome oil fields, pp. 781–782, 1926.
15. Origin of North American salt domes: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 5, pp. 831–874, August, 1925; Geology of salt dome oil fields, pp. 1–44, 1926.
16. Geophysical methods in economic geology: Econ. Geology, vol. 21, no. 3, pp. 294–298, May, 1926.
17. (and others). Geology of salt dome oil fields; a symposium on the origin, structure, and general geology of salt domes, with special reference to oil production and treating chiefly the salt domes of North America. 797 pp. illus., published by American Association of Petroleum Geologists, 1926. [Reprint in book form of papers in volume 9 of the Bulletin.]
18. The seductive influence of the closed contour: Econ. Geology, vol. 23, no. 6, pp. 681–682, September–October, 1928.

De Iongh, W. H. D.

1. Enkele geologische en mineralogische mededeelingen over Mexico in het algemeen en over de mijndistricten Zacatecas, Pachuca, en Real del Monte in het bijzonder [general geology of Mexico and ore deposits of Zacatecas and other districts, particularly the silver ores]: De Ingenieur, Den Haag, Jaarg. 35, no. 1, pp. 4–9, 2 figs., January 3, 1920.

Deiss, Charles F., jr.

1. *Anisotrypa waynensis*, a new bryozoan from the Warsaw formation of Kentucky: Michigan, Univ., Mus. Geology, Contr., vol. 2, no. 14, pp. 237–239, 2 pls., August 3, 1927.

DeKalb, H. Leonard.

1. A guide to the geology of Fergus County, Montana. 48 pp., 10 figs., Lewiston, Mont., Argus Printing & Supply Co. [1923?].

De Landero, Carlos F. See Landero, Carlos F. de.

Delavan, Fred.

1. Some recent finds of remains of the extinct ground sloth in southwest Iowa: Iowa Acad. Sci., Proc., 1926, vol. 33, pp. 203–205 [1927].

Dellenbaugh, Frederick Samuel.

1. Memorial to John Wesley Powell: Am. Anthropologist, vol. 20, no. 4, pp. 432–436, 2 pls., October–December, 1918.

DeLury, Justin Sarsfield.

1. Mineral prospects in southeastern Manitoba; Rice Lake, Maskwa River, and Boundary districts. 55 pp., illus., Manitoba Bulletins, Office of Commissioner of northern Manitoba, The Pas, Manitoba [1920].
2. Some economic aspects of the Falcon Lake district, Manitoba: Canadian Min. Inst., Trans., vol. 22, pp. 320–328 [1920].
3. An occurrence of tin near the Ontario-Manitoba boundary: Canadian Min. Jour., vol. 41, pp. 520–521, 2 figs., June 25, 1920.
4. Mineral prospects in southeastern Manitoba: Rice Lake, Maskwa River, and Boundary districts: Manitoba Bulletins, Commissioner of Northern Manitoba, 55 pp., illus., map [1921].

DeLury, Justin Sarsfield—Continued.

5. An application of the theory of metallogenesis to the prospecting areas of Manitoba: Canadian Inst. Min. and Met., Bull., no. 162, pp. 931-940, October, 1925; Trans., vol. 28, pp. 358-370, 1 pl. [1926].
6. Wapawekka and Deschambault lakes area, Saskatchewan: Canada, Geol. Survey, Summ. Rept., 1924, pt. B, pp. 23-50, map (in two sheets), 1926.
7. Experiments with model glaciers: Jour. Geology, vol. 34, no. 3, pp. 266-274, 3 figs., April-May, 1926.
8. Pegmatites of southeastern Manitoba: Canadian Min. Jour., vol. 47, no. 28, pp. 695-697, July 9, 1926.

Denis, Théophile Constant.

1. Report on mining operations in the Province of Quebec during the year 1918: Quebec (Province), Department of Colonization, Mines, and Fisheries, 158 pp., map, Quebec, 1919.
2. Report on mining operations in the Province of Quebec during the year 1919: Quebec (Province), Department of Colonization, Mines, and Fisheries, 160 pp., pls., map, Quebec, 1920.
3. Report on mining operations in the Province of Quebec during the year 1920: Quebec (Province), Department of Colonization, Mines, and Fisheries, 140 pp., illus., Quebec, 1921.
4. Report on mining operations in the Province of Quebec during the year 1921: Quebec (Province), Department of Colonization, Mines, and Fisheries, 156 pp., illus., Quebec, 1922.
5. Report on mining operations in the Province of Quebec during the year 1922: Quebec (Province), Dept. of Colonization, Mines, and Fisheries, 138 pp., 1923.
6. Prospects for gold in northwestern Quebec: Eng. and Min. Jour.-Press, vol. 115, no. 15, pp. 674-675, April 14, 1923.
7. Report on mining operations in the Province of Quebec during the year 1923: Quebec (Province), Department of Colonization, Mines, and Fisheries, 124 pp., illus., 1924.
8. Report on mining operations in the Province of Quebec during the year 1924: Quebec (Province), Dept. Colonization, Mines and Fisheries. 170 pp., illus., 1925.
9. Report on mining operations in the Province of Quebec during the year 1925: Quebec (Province), Department of Colonization, Mines, and Fisheries, 198 pp., illus., 1926.
10. Report on mining operations in the Province of Quebec during the year 1926: Quebec (Province), Department of Colonization, Mines, and Fisheries, 191 pp., illus., 1927.
11. Mining operations in the Province of Quebec during the year 1927: Quebec (Province), Department of Colonization, Mines, and Fisheries, Bur. Mines, 246 pp., illus., 1928.

Denison, A. R.

1. The Robberson field, Garvin County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 6, pp. 625-644, 9 figs., November-December, 1923.
2. Early Pennsylvanian sediments west of the Nemaha granite ridge, Kansas: Am. Assoc. Petroleum Geologists, Bull., vol 10, no. 6, p. 636, June, 1926.

Denison, F. Napier.

1. The British Columbia earthquake of December 6, 1918: *Seismol. Soc. America, Bull.*, vol. 9, no. 1, pp. 20-23, March, 1919.

De Quervain, F. See Hirschi, 4.

De Silva, Luis.

1. El mineral de Mezquital del oro en el Estado de Zacatecas: *Bol. minero*, t. 20, no. 4, pp. 155-169, October, 1925.

Deussen, Alexander.

1. Salt domes of Texas and Louisiana: *Oil Weekly*, vol. 24, no. 4, pp. 11, 16, 18, January 21, 1922.
2. (and Lane, Laura Lee). Hockley salt dome, Harris County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 7, pp. 1031-1060, 6 figs., 1 pl., October, 1925; *Geology of salt dome oil fields*, pp. 570-599, 6 figs., 1 pl., 1926.

DeWolf, Frank Walbridge. See also Richardson, G. B., 1.

1. The outlook for geology and geography: *School Science and Mathematics*, vol. 19, no. 5, pp. 391-397, May, 1919; *Illinois State Acad. Sci., Trans.*, vol. 12, pp. 47-54 [1920].
2. Administrative report from July 1, 1916, to June 30, 1917: *Illinois State Geol. Survey, Bull.* no. 36, pp. 9-18, 1920.
3. Gravel and limestone in Illinois: *Illinois Soc. Engineers, 35th Ann. Rept.*, pp. 72-73, 1920.
4. (and Mylius, L. A.). A new Trenton field in Illinois: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 4, no. 1, pp. 43-46, 1 fig., 1920.
5. Administrative report from July 1, 1917, to June 30, 1919; *Illinois, State Geol. Survey, Bull.* no. 38, pp. 10-23, 1922.
6. Relation of topographic and geologic mapping of Illinois to professional engineering: *Western Soc. Eng., Jour.*, vol. 28, no. 1, pp. 18-26, 4 figs. (maps), January, 1923.
7. (and Seashore, Paul T.). Diamond drilling near Kerens, Navarro County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 7, pp. 703-708, 1 pl., July, 1926.

Diamond, Benjamin T.

1. An introduction to fossils: *Rocks and Minerals*, vol. 1, no. 2, pp. 37-39, December, 1926; vol. 2, no. 1, pp. 16-18, March; no. 2, pp. 58-60, June; no. 3, pp. 102-103, September; no. 4, pp. 142-143, December, 1927; vol. 3, no. 1, pp. 18-19, March; no. 2, pp. 40-41, June; vol. 3, no. 3, pp. 86-87, September, 1928.

Díaz Lozano, Enrique.

1. Depósitos diatomíferos en el Valle de Toxi, Ixtlahuaca, Estado de México: *Mexico, Inst. Geol., Anales*, no. 9, pp. 1-19, 5 pls., 1920.
2. Manantiales en el pueblo de Tepexi de Rodríguez, Estado de Puebla: *Mexico, Inst. Geol., Anales*, no. 9, pp. 21-29, 9 pls., 1920.
3. Sierra del Novillo ó Trinchera, Distrito Sur, Baja California: *Mexico, Inst. Geol., Bol.* no. 39, pp. 71-92, 31 pls. (incl. maps), 1922.
4. Los restos fósiles de "Elephas" encontrados en terrenos de la hacienda de Tepexpan, Estado de México: *Mexico, Inst. Geol., Anales*, t. 2, nos. 6-10, pp. 201-202, 1927.
5. Corte geológico entre Cárdenas, San Luis Potosí, y Tampico, Tampico, en la línea del ferrocarril de San Luis á Tampico: *Bol. Petróleo*, vol. 23, no. 3, pp. 162-171, 7 pls., map, March, 1927.

Díaz Lozano, Enrique—Continued.

6. Los microorganismos fósiles y la geología del petróleo: Bol. Petróleo, vol. 26, nos. 4-5, pp. 397-400, October and November, 1928.

Dice, Lee Raymond.

1. Rodents and lagomorphs of the Rancho La Brea deposits [California]: Carnegie Inst. Washington, Pub. no. 349, pp. 119-130, 17 figs., August, 1925.

Dickerson, Roy Ernest.

1. A criticism of the "Faunal relationships of the Meganos group" by Bruce L. Clark: Jour. Geology, vol. 30, no. 4, pp. 295-302, 1 fig., May-June, 1922.
2. Tertiary and Quaternary history of the Petaluma, Point Reyes, and Santa Rosa quadrangles [California]: California Acad. Sci., Proc., 4th ser., vol. 11, no. 19, pp. 527-601, 25 pls., (incl. maps), July 10, 1922.

Dickey, J. B. R. See Pennsylvania Topographic and Geologic Survey.

Diener, Carl.

1. Major features of earth's surface: Pan-Am. Geologist, vol. 37, no. 3, pp. 177-197, April, 1922.
2. A critical phase in the history of ammonites: Am. Jour. Sci., 5th ser., vol. 4, pp. 120-126, August, 1922.

Dietrich, Waldemar Fenn.

1. The clay resources and the ceramic industry of California: California State Min. Bur., Bull. no. 99, 383 pp., 70 figs., 12 pls., January, 1928.
2. Clay prospecting and mining in California: Am. Inst. Min. and Met. Eng., Trans., vol. 76, pp. 413-429, 1928.

Dille, Glenn S.

1. Notes on the occurrence of a black bituminous shale near Palo, Linn County, Iowa: Iowa Acad. Sci., Proc., vol. 30, pp. 441-443 [1924].
2. Anticlines of the State of Iowa: Iowa Acad. Sci., Proc., 1926, vol. 33, pp. 183-198 [1927].
3. Nature of Devonian oolite from Linn County (abstract): Pan-Am. Geologist, vol. 48, no. 2, p. 158, September, 1927.
4. (and Couser, C. W.). Ancient glacial lakelet near Cedar Rapids [Iowa] (abstract): Pan-Am. Geologist, vol. 48, no. 5, p. 376, December, 1927.
5. Notes on the occurrence of oolitic limestone in the Otis beds of the Devonian, Kenwood, Iowa: Iowa Acad. Sci., Proc., 1927, vol. 34, pp. 231-233, 4 pls. [1928].
6. (and Couser, C. W.). An extinct glacial pond near Cedar Rapids, Linn County, Iowa: Iowa Acad. Sci., Proc., 1927, vol. 34, p. 239, 2 figs. [1928].

Diller, Joseph Silas, 1850-1928.

1. Recent studies of domestic chromite deposits: Am. Inst. Min. and Met. Eng., Bull. no. 153, pp. 1995-2040, 29 figs., September, 1919; Trans., vol. 63, pp. 105-149, 26 figs., 1920.
2. Chromite in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 657-679, 1 fig., May 15, 1920.
3. Asbestos in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 2, pp. 545-556, March 20, 1920.

Diller, Joseph Silas—Continued.

4. Talc and soapstone in 1918. U. S. Geol. Survey, Mineral Resources, 1918, pt. 2, pp. 557–563, March 29, 1920.
5. (and Fairchild, J. G., and Larsen, E. S.). High-grade talc for gas burners: Econ. Geology, vol. 15, no. 8, pp. 665–673, December, 1920.
6. Chromite in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 1, pp. 87–91, February 4, 1921.
7. Talc and soapstone in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 265–268, April 14, 1921.
8. Asbestos in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 299–307, 1 fig., May 14, 1921.
9. Chromite in the Klamath Mountains, California and Oregon: U. S. Geol. Survey, Bull. 725, pp. 1–35, 6 figs., 5 pls., August 3, 1921. Abstract, Washington Acad. Sci., Jour., vol. 12, no. 3, p. 72, February 4, 1922.
10. Surface fusion of lava: Geol. Soc. America, Bull., vol. 33, no. 1, pp. 142–144, 2 figs., March 31, 1922.
11. Did Crater Lake, Oregon, originate by a volcanic subsidence or an explosive eruption?: Jour. Geology, vol. 31, no. 3, pp. 226–227, 1 fig., April–May, 1923.
12. (and Kay, G. F.). Description of the Riddle quadrangle [Oregon]: U. S. Geol. Survey, Geol. Atlas U. S., Riddle folio, Oregon (no. 218), 8 pp., 8 figs., 3 maps, 1924.

Dixon, Dorothy Elizabeth.

1. Bibliography of the geology of Oregon: Oregon, Univ., Pub., Geology ser., vol. 1, no. 1, 125 pp., June, 1926.

Doak, Samuel E.

1. The Oriskany iron ores of Virginia: Eng. and Min. Jour., vol. 111, no. 9, pp. 386–387, February 26, 1921.

Dobbel, Lillian M.

1. Magnesite crystals from Orangedale, Nova Scotia: Am. Mineralogist, vol. 8, no. 12, pp. 223–228, 3 figs., December, 1923.

Dobbin, Carroll Edward. See also Baker, A. A., 1; Thom, 3, 7, 8, 16; Wegemann, 1.

1. Geology of the Wiles area, Ranger district, Texas: U. S. Geol. Survey, Bull. 736, pp. 55–69, 5 figs., 2 pls. (incl. map), June 28, 1922.
2. (and Reeside, J. B., jr.). The Lance-Fox Hills contact an eastern Montana and the Dakotas (abstract): Washington Acad. Sci., Jour., vol. 14, no. 7, pp. 165–166, April 4, 1924.
3. (and Barnett, V. H.). The Gillette coal field, northeastern Wyoming: U. S. Geol. Survey, Bull. 796, pp. 1–50, 3 figs. (incl. maps), 11 pls., August 8, 1927.
4. (and Reeside, J. B., jr.). Problems of the Chugwater-Sundance contact (discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 11, pp. 1235–1236, November, 1927.
5. (and Hoots, H. W., and Dane, C. H.). Geology and oil and gas possibilities of the Bell Springs district, Carbon County, Wyoming: U. S. Geol. Survey, Bull. 796, pp. 171–197, 2 figs. 5 pls. (incl. map), January 19, 1928.

Dodd, Harold V.

1. Some preliminary experiments on the migration of oil up low-angle dips: Econ. Geology, vol. 17, no. 4, pp. 274–291, 2 figs., June–July, 1922.

Dodd, Harold V.—Continued.

2. Dominguez oil field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 12, no. 4, pp. 7-20, 4 figs., 2 pls., October, 1926.

Dodge, W. E.

1. Notes to inventor geologists [recording machines]: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 1, pp. 50-53, 1 pl., January-February, 1922.

Dolan, E. P.

1. The contact-metamorphic zone of Mount Royal, Montreal, P. Q.: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 17, sec. 4, pp. 127-151, May, 1923.

Doll, Charles G. See also Fisher, L. W., 4.

Dolmage, Victor.

1. Quatsino Sound and certain mineral deposits of the west coast of Vancouver Island, British Columbia: Canada, Geol. Survey, Summ. Rept., 1918, pt. B, pp. 30-38, 1 fig., 1919.
2. Barkley Sound, Vancouver Island, British Columbia: Canada, Geol. Survey, Summ. Rept., 1919, pt. B, pp. 12-20, 1920.
3. Sunloch copper district [Vancouver Island], British Columbia: Canada, Geol. Survey, Summ. Rept., 1919, pt. B, pp. 20-30, 2 figs. (incl. map), 1920.
4. The high-grade silver ores of the Stewart district, British Columbia: Canadian Min. Jour., vol. 41, pp. 454-458, 10 figs., June 4, 1920.
5. West coast of Vancouver Island between Barkley and Quatsino sounds [British Columbia]: Canada, Geol. Survey, Summ. Rept., 1920, pt. A, pp. 12-22, 1921.
6. Geological mapping in the Canadian Cordillera: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 3, pp. 689-695, 1 fig., 1921.
7. The Marble Bay mine, Texada Island, British Columbia: Econ. Geology, vol. 16, no. 6, pp. 372-392, 2 pls., September-October, 1921.
8. Coast and islands of British Columbia between Burke and Douglas channels: Canada, Geol. Survey, Summ. Rept., 1921, pt. A, pp. 22-49, 2 figs., 2 maps, 1922.
9. Coast and islands of British Columbia between Douglas Channel and the Alaskan boundary: Canada, Geol. Survey, Summ. Rept., 1922, pt. A, pp. 9-34, 2 maps, 1923.
10. Post-Pleistocene volcanics of the British Columbia coast: Jour. Geology, vol. 32, no. 1, pp. 36-48, 9 figs., January-February, 1924.
11. The work of the Geological Survey [of Canada] in British Columbia: Canadian Min. Jour., vol. 45, no. 9, pp. 211-212, 1 fig., February 29, 1924.
12. Prospecting: Canadian Min. Jour., vol. 45, no. 17, pp. 391-396, April 25, 1924.
13. The western mineral belt of British Columbia: Canadian Min. Jour., vol. 45, no. 26, pp. 614-617, June 27, 1924.
14. The B. C. silver mine [Stewart district, British Columbia]: Canadian Min. Jour., vol. 45, no. 30, pp. 711-712, 3 figs., July 25, 1924; Min. Mag., vol. 31, no. 3, p. 188, September, 1924.

Dolmage, Victor—Continued.

15. Chilko Lake and vicinity, British Columbia: Canada, Geol. Survey, Summ. Rept., 1924, pt. A, pp. 59–75, 1 fig., 2 pls., map, 1925.
16. Tatla-Bella Coola area, Coast district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 155–163, map, 1926.
17. Finlay River district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1927, pt. A, pp. 19–41, 2 pls. (maps), 1928.

Dolman, C. D.

1. Magnesite; its geology, products, and their uses: Am. Inst. Min. and Met. Eng., Bull. no. 152, pp. 1193–1202, 2 figs., August, 1919; (with discussion), Trans., vol. 63, pp. 175–187, 2 figs., 1920.

Donnay, Joseph D. H.

1. Cleavage vs. parajointing (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 308, May, 1928.

Donoghue, David.

1. Absence of metamorphosed sedimentary rocks in the Texas Panhandle: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 2, pp. 241–242, March–April, 1924.
2. The Bayou Bouillon salt dome, St. Martin Parish, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 9, pp. 1283–1289, 1 fig., December, 1925; Geology of salt dome oil fields, pp. 345–351, 1 fig., 1926.
3. Section 28 salt dome, St. Martin Parish, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 9, pp. 1290–1293, 1 fig., December, 1925; Geology of salt dome oil fields, pp. 352–355, 1 fig., 1926.
4. Thirteenth annual meeting of the American Association of Petroleum Geologists, San Francisco and Los Angeles, California, March 21–25, 1928: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 5, pp. 570–591, May, 1928.

Dorfman, Andre. See Bell, J. M., 9.

Dorsey, George Edwin.

1. Stratigraphy and structure of the Newark system in Maryland and its relation to the Newark system of eastern North America (abstract): Geol. Soc. America, Bull., vol. 30, pp. 155–157, March 31, 1919.
2. The origin of color of red beds: Jour. Geology, vol. 34, no. 2, pp. 131–143, February–March, 1926.
3. The present status of the carbon-ratio theory (with discussion by Russell S. Tarr): Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 5, pp. 455–465, May, 1927.

Dott, Robert H.

1. Notes on Pennsylvanian paleogeography, with special reference to south-central Oklahoma: Oklahoma Geol. Survey, Bull. no. 40–J, 22 pp., 11 figs. (incl. maps), March, 1927; Bull. 40, vol. 1, pp. 51–69, 11 figs. (incl. maps), July, 1928.
2. Geology of Garvin County: Oklahoma Geol. Survey, Bull. no. 40–K, pp. 7–31, 3 figs., 3 pls. (incl. map), May, 1927.
3. Geology of Garvin County, Oklahoma, and the Robberson field: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 8, p. 889, August, 1927.

Dougherty, Ellsworth Y.

1. The gold quartz lodes of Porcupine, Ontario: *Min. and Sci. Press*, vol. 118, pp. 532-536, 10 figs., April 19, 1919.
2. Relation of regional deformations to the distribution of ore in the pre-Cambrian: *Min. and Sci. Press*, vol. 119, pp. 227-230, 1 fig., August 16, 1919.
3. Mode of formation of the Porcupine quartz veins: *Econ. Geology*, vol. 20, no. 7, pp. 660-670, 2 pls., November, 1925.
4. Formation of Porcupine quartz veins (discussion): *Econ. Geology*, vol. 21, no. 6, pp. 612-619, September, 1926.
5. Replacement of aluminous rocks: *Eng. and Min. Jour.*, vol. 122, no. 10, pp. 380-381, September 4, 1926.
6. Magnetite deposits of Madera County, California: *Eng. and Min. Jour.*, vol. 123, no. 19, pp. 765-770, 7 figs., May 7, 1927; vol. 124, no. 8, p. 301, August 20, 1927.
7. The opening as a reason for ore: *Econ. Geology*, vol. 23, no. 5, pp. 569-578, August, 1928.

Douglas, A. Vibert. See Douglas, G. Vibert, 5.

Douglas, C. B. E.

1. Banding around rock fragments: *Eng. and Min. Jour.*, vol. 122, no. 18, p. 700, October 30, 1926.

Douglas, G. Vibert.

1. Spectroscopy applied to mineral determination: *Econ. Geology*, vol. 19, no. 8, pp. 766-768, December, 1924.
2. The Whiskey Lake area, District of Algoma: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 4, pp. 34-49, illus., map, 1926.
3. La Cloche area, District of Sudbury: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 4, pp. 50-51, map, 1926.
4. Reconnaissance from Red Lake to Favourable Lake, District of Patricia: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 4, 1925, 28 pp., 21 figs., 2 maps, 1926.
5. (and Douglas, A. Vibert). A solution of fault problems: *Canadian Min. and Met. Bull.*, no. 198, pp. 1228-1232, 3 figs., October, 1928; *Canadian Inst. Min. and Met., Trans.*, vol. 31, pp. 12-16, 3 figs. [1929].

Douglas, George Mellis.

1. Copper deposits of Arctic Canada: *Eng. and Min. Jour.-Press*, vol. 118, no. 3, pp. 85-89, 5 figs., July 19, 1924; *Min. Mag.*, vol. 31, no. 3, pp. 178-180, 1 fig., September, 1924.

Douglas, J. M. See Hintze, 1.

Douglass, Earl.

1. The oil problem in the Uinta Basin, Utah: *Salt Lake Min. Rev.*, vol. 23, no. 16, pp. 12-13, November 30, 1921; no. 17, pp. 14-15, December 15, no. 18, pp. 9-11, December 30, 1921; no. 20, pp. 13-14, January 30, 1922; no. 22, pp. 9-11, February 28; no. 23, pp. 11-14, March 15; vol. 24, no. 1, pp. 17-18, April 15; no. 2, pp. 9-11, April 30; no. 5, pp. 11-13, June 15; no. 7, pp. 9-11, July 15; no. 10, pp. 11-14, 21 figs., August 30, 1922.
2. Oil problems in the Uinta Basin, Utah: *Salt Lake Min. Rev.*, vol. 24, no. 21, pp. 17-18, February 15, 1923; vol. 25, no. 3, pp. 18-20, May 15, 1923.

Douvillé, Henri.

1. Les orbitoïdes en Amérique: Soc. géol. France, Compt. Rend. Somm., nos. 10-11, pp. 106-107, 1923.
2. Les orbitoïdes et leur évolution en Amérique: Soc. géol. France, Bull., 4^e sér., t. 23, nos. 7-8, pp. 369-376, 4 figs., 1 pl., 1924.
3. Revision des lépidocyclines: Soc. géol. France, Mém., new ser., t. 1, mém. no. 2, 49 pp., 47 figs., 2 pls., 1924.

Dove, Leonard P. See also Barrett, 8; Leonard, 7.

1. Sphalerite in coal pyrite [Bicknell, Indiana]: Am. Mineralogist, vol. 6, no. 3, p. 61, March, 1921.
2. The problem of prospecting for coal in glaciated areas: North Dakota, Univ., Quart. Jour., vol. 11, no. 3, pp. 215-222, 5 figs., April, 1921.
3. The geology and structure of the east side of the Nesson anticline: North Dakota, Univ., Quart. Jour., vol. 12, no. 3, pp. 240-249, 4 figs., 2 pls., April, 1922.
4. Clinkertill, a new metamorphic rock: Science, new ser., vol. 56, p. 338, September 22, 1922.
5. The prospecting and evaluation of lignite lands in North Dakota: North Dakota, Univ., Quart. Jour., vol. 14, no. 1, pp. 60-69, November, 1923.
6. Dakalite: North Dakota, Univ., Departmental Bull., vol. 11, no. 1 (College of Engineering, Division of Mines and Mining Experiments, Bull. no. 9), pp. 33-37, January, 1926.

Dow, Charles Mason.

1. Anthology and bibliography of Niagara Falls (chapter 7, Science, geology, and physics). 2 vols., 1423 pp., illus., published by the State of New York, Albany, 1921.

Dowell, Norah E. See Stearns, Norah Dowell.

Dowling, Donaldson Bogart, 1858-1925. See also Hume, 28.

1. (and Slipper, S. E., and McLearn, F. H.). Investigations in the gas and oil fields of Alberta, Saskatchewan, and Manitoba: Canada, Geol. Survey, Mem. 116, 89 pp., 14 pls. (incl. maps), 1919.
2. The structure and correlation of the formations underlying Alberta, Saskatchewan, and Manitoba: Canada, Geol. Survey, Mem. 116, pp. 1-9, 1919.
3. Records of selected wells arranged in east-west order [Manitoba, Saskatchewan, and Alberta]: Canada, Geol. Survey, Mem. 116, pp. 34-84, map, 1919.
4. Gasoline in natural gas; experiments on Alberta gas: Canada, Geol. Survey, Summ. Rept., 1918, pt. C, pp. 17-42, 1 fig., 1919.
5. Oil possibilities and developments in the Great Plains: Canada, Geol. Survey, Summ. Rept., 1919, pt. C, pp. 20-24, 1 map, 1920.
6. [The occurrence of oil in Alberta] (discussion): Am. Inst. Min. and Met. Eng., Bull. no. 149, p. 854, May, 1919.
7. The rocks of the plains. In Oil and gas in western Canada, compiled under the direction of the Superintendent Natural Resources Intelligence Branch, Dept. Interior, Canada, pp. 10-15, 2 figs., 1920.
8. The possibilities of the oil resources of Canada: Canadian Min. Jour., vol. 41, pp. 287-292, 2 figs., April 9, 1920.
9. The oil possibilities of western Canada: Canadian Min. Inst., Monthly Bull. no. 98, pp. 469-477, 2 figs., June, 1920; Trans., vol. 23, pp. 351-359 [1921].

Dowling, Donaldson Bogart—Continued.

10. Review of prospecting for oil on the Great Plains: Canada, Geol. Survey, Summ. Rept., 1920, pt. B, pp. 11-25, 7 figs., 1921.
11. Underlying seams of the Souris coal field, southeastern Saskatchewan: Canada, Geol. Survey, Summ. Rept., 1920, pt. B, pp. 26-29, 1921.
12. The Turtle Mountain coal measures [Manitoba]: Roy. Soc. Canada, Proc. and Trans., 3d ser. vol. 14, sec. 4, pp. 35-43, 2 figs., 1921.
13. The possibilities of the oil resources of Canada: Roy. Canadian Inst., no. 29, vol. 13, pt. 1, pp. 39-47, 2 figs., February, 1921.
14. History of discovery of western coal fields: Canadian Min. Jour., vol. 42, no. 41, pp. 819-821, October 14, 1921.
15. Geological structure of the Mackenzie River region: Canada, Geol. Survey, Summ. Rept., 1921, pt. B, pp. 79-90, 3 figs., 2 pls., 1922.
16. The eastern belt of the Canadian Cordilleras; an inquiry into the age of the deformation: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 16, sec. 4, pp. 175-186, 2 figs., 2 pls., 1922.
17. The Mackenzie River basin (abstract): Science, new ser., vol. 56, pp. 175-176, August 11, 1922.
18. Red Lake district of Patricia [Ontario]: Canadian Min. Jour., vol. 43, no. 40, pp. 676-678, 1 fig., October 6, 1922.
19. Investigation of artesian water, coal, petroleum, and natural gas: Canada, Geol. Survey, Summ. Rept., 1922, pt. B, pp. 101-126, 2 pls., map, 1923.
20. Bow River coal basin within the Rocky Mountains, Alberta: Canada, Geol. Survey, Summ. Rept., 1923, pt. B, pp. 63-85, 4 figs., 1924.

Downing, Eliot Rowland.

1. A naturalist in the Great Lakes region. 328 pp., 452 figs., Chicago, University of Chicago Press, 1922.

Doxsee, W. W.

1. The location of epicenters, 1921: Canada, Dominion Observatory, Ottawa, Pub., vol. 7, no. 2, pp. 61-78, 1925.
2. The location of epicenters, 1922: Canada, Dominion Observatory, Ottawa, Pub., vol. 7, no. 3, pp. 81-102, 1926.

Drane, Brent S.

1. North Carolina's mineral resources and their development: The South's Development, Manufacturers Record, vol. 86, no. 24, pt. 2, pp. 398-401, December 11, 1924.
2. Biennial report of the State geologist and director, 1923-1924: North Carolina Geol. and Econ. Survey, 65 pp., 1925.
3. (and Stuckey, Jasper L.). The mineral industry in North Carolina from 1918-1923 (inclusive): North Carolina Geol. and Econ. Survey, Econ. Paper no. 55, 104 pp., 1925.

Draper, L. L.

1. Genesis of sulphide ores: Eng. and Min. Jour.-Press, vol. 121, no. 11, pp. 449-450, March 13, 1926.

Dreher, Otto.

1. The files of the oil geologist: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 331-339, 6 figs., March-April, 1925.
2. Symbols for dip and strike: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 8, pp. 868-870, 4 figs., August, 1927.

Dresser, John Alexander.

1. Granitic segregations in the serpentine series of Quebec: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 14, sec. 4, pp. 7-13, 1921.
2. Mining in Quebec: Canadian Min. Jour., vol. 44, no. 33, pp. 645-647, 1 fig., August 17, 1923.
3. The Magog conglomerate; a horizon mark in the "Quebec group"; Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 19, sec. 4, pp. 115-121, 1925.
4. (and others). Geological traverses in the counties of Maskinonge, Saint-Maurice, Champlain, Portneuf, Quebec, Montmorency: Quebec, Dept. Colonization, Mines, and Fisheries, Mines Branch, 11 pp. [French text, pp. 13-22], 6 maps, 1928.
5. Copper in the eastern townships [of Quebec]: Canadian Min. and Met. Bull., no. 191, pp. 341-346, March, 1928; Canadian Inst. Min. and Met., Trans., vol. 31, pp. 83-88 [1929].

Driver, Herschel L.

1. An aid in disintegrating samples for micro-organic study: Jour. Paleontology, vol. 1, no. 4, pp. 253-254, January, 1928.
2. Foraminiferal section along Adams Canyon, Ventura County, California: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 7, pp. 753-756, 1 pl., July, 1928.

Drummond, Robert.

1. Minerals and mining, Nova Scotia. 368 pp., Mining Record Office, Stelarton, N. S., 1918.

Drury, Charles William.

1. Cobalt; its occurrence, metallurgy, uses, and alloys: Ontario Bur. Mines. Rept. 1918, vol. 27, pt. 3, sec. 1, 133 pp., map, 27 figs., 1919.

Duane, William.

1. The radioactive point of view [of the age of the earth]: Am. Philos. Soc. Proc., vol. 61, no. 4, pp. 286-288, 1922.
2. The age of the earth (abstract): Science, new ser., vol. 55, p. 656, June 16, 1922.

Dub, George David.

1. (and Moses, Frederick G.). Mining and preparing domestic graphite for crucible use: U. S. Bur. Mines. Bull. 112, 80 pp., 5 pls., 20 figs., 1920.

Dubendorff, H. H. See Schwennesen, 2.

Duce, J. F. See White, D, 1.

Duce, James Terry.

1. Geology of parts of Las Animas, Otero, and Bent counties: Colorado Geol. Survey, Bull. 27, pt. 3, pp. 73-102, 2 figs., map, 1924.
2. Carbon dioxide from wells in Colorado: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 6, p. 831, November-December, 1924.

Dufresne, A. O.

1. An occurrence of native gold in calcite [Dorchester County, Quebec]: Canadian Inst. Min. and Met., Monthly Bull., no. 128, pp. 1227-1228, December, 1922.

Dufresne, A. O.—Continued.

2. An occurrence of native gold in calcite [Dorchester County, Quebec]: Canadian Inst. Min. and Met., Monthly Bull., no. 128, pp. 1227-1228, December, 1922; Min. Mag. vol. 28, no. 1, pp. 59-60, January, 1923. Descubrimiento de oro nativo en calcite: Cuba, Dirección de Montes y Minas, Bol. Minas, no. 7, pp. 87-88, 1923.
3. Gold in northwestern Quebec: Canadian Min. Jour., vol. 44, no. 33, pp. 647-649, 3 figs., August 17, 1923.
4. Notes on some of the gold deposits in Temiscamingue and Abitibi counties: Quebec, Dept. Colonization . . . Report on Mining Operations . . . 1924, pp. 42-78, 3 pls., 3 figs. (maps), 1925.
5. Mineral deposits of western Quebec and their development in 1925: Quebec, Dept. Colonization . . . Report on Mining Operations . . . 1925, pp. 99-153, 1926.
6. Recent mineral discoveries in western Quebec: Canadian Inst. Min. and Met., Bull., no. 169, pp. 610-626, 1 fig., map, May, 1926: Canadian Min. Jour., vol. 47, no. 23, pp. 569-571, 1 fig., June 4, 1926.
7. Copper and zinc deposits of western Quebec: Canadian Min. Jour., vol. 47, no. 33, pp. 793-798, 4 figs., August 13, 1926.
8. Report on mining operations in the Province of Quebec during the year 1927: Quebec (Province), Department of Colonization, Mines, and Fisheries, Bur. Mines, 246 pp., illus., 1928.
9. (and Taschereau, R. H.). Progress in the development of the mineral deposits of western Quebec in 1927: Quebec, Dept. Colonization, Mines, and Fisheries, Bur. Mines, Rept. on Mining Operations, 1927, pp. 77-161, 15 figs., 7 pls., 1928.
10. Mining developments in western Quebec during 1926 and 1927: Canadian Min. and Met. Bull., no. 198, pp. 1171-1183, October, 1928.

Dumble, Edwin Theodore, 1852-1927. See also DeGolyer, 2.

1. The geology of east Texas: Texas, Univ., Bull. no. 1869, 388 pp., 12 pls. (incl. map), December 10, 1918 [published February, 1920].
2. Foraminiferal guides to Texas coast deposits: Pan-Am. Geologist, vol. 39, no. 1, pp. 61-63, February, 1923.
3. Oil well stratigraphy on Gulf coastal plains: Pan-Am. Geologist, vol. 39, no. 2, pp. 95-100, March, 1923.
4. Marine Wilcox in Mexico: Science, new ser., vol. 57, p. 31, July 13, 1923.
5. Memorial of Anthony Wayne Vogdes: Geol. Soc. America, Bull., vol. 35, no. 1, pp. 37-42, portr., March 30, 1924.
6. (and Applin, E. R.). Subsurface geology of Idolo Island, Vera Cruz, Mexico: Pan-Am. Geologist, vol. 41, no. 5, pp. 335-346, June, 1924.
7. A revision of the Texas Tertiary section with special reference to the oil-well geology of the coast region: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 4, pp. 424-444, July-August, 1924.

Dunbar, Carl Owen. See also Chadwick, 11; Clarke, J. M., 21; Schuchert, 16.

1. Stratigraphy and correlation of the Devonian of western Tennessee: Tennessee State Geol. Survey, Bull. 21, 127 pp., 3 pls., 11 figs., 1919.
2. New species of Devonian fossils from western Tennessee: Connecticut Acad. Arts and Sci., Trans., vol. 23, pp. 109-158, 5 pls., February, 1920.
3. Kansas Permian insects, Part 2; *Paleolimulus*, a new genus of Paleozoic Xiphosura, with notes on other genera: Am. Jour. Sci., 5th ser., vol. 5, pp. 443-454, 8 figs., June, 1923.

Dunbar, Carl Owen—Continued.

4. Kansas Permian insects, Part 1, The geologic occurrence and the environment of the insects: *Am. Jour. Sci.*, 5th ser., vol. 7, pp. 171–209, 3 figs., March, 1924.
5. Phases of cephalopod adaptation. In *Organic adaptation to environment*, pp. 187–223, 4 figs., New Haven, Yale University Press, 1924.
6. Memorial of Thomas A. Bostwick: *Geol. Soc. America, Bull.*, vol. 35, no. 1, p. 181, March 30, 1924.
7. Was there Pennsylvanian-Permian glaciation in the Arbuckle and Wichita Mountains of Oklahoma?: *Am. Jour. Sci.*, 5th ser., vol. 8, pp. 241–248, September, 1924.
8. *Olenellus* with antennules (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 229, March 30, 1925.
9. Antennae in *Olenellus getzi* n. sp.: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 303–308, 2 figs., April, 1925.
10. Pseudopercula in the tabulate coral *Favosites*: *Am. Jour. Sci.*, 5th ser., vol. 13, pp. 101–114, 9 figs., February, 1927; abstract: *Pan-Am. Geologist*, vol. 47, no. 3, p. 240, April, 1927.
11. (and Condra, G. E.). The Fusulinidae of the Pennsylvanian system in Nebraska: *Nebraska Geol. Survey*, 2d ser., Bull. 2, 135 pp., 13 figs., 15 pls., December, 1927.
12. Fusulinidae as an aid in zoning the American upper Carboniferous strata (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 290–291, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 3, p. 226, April, 1928.
13. On an ammonite shell investing commensal Bryozoa: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 164–165, August, 1928.

Dunkin, D. D.

1. Mining and preparation of St. Peter sandstone in Arkansas: *Am. Inst. Min. and Met. Eng., Tech. Pub. no. 55*, 10 pp., 8 figs., February, 1928; *Trans.*, vol. 76, pp. 430–441, 8 figs., 1928; abstract, *Mining and Metallurgy*, vol. 9, no. 254, p. 79, February, 1928.

Dunlop, John P.

1. (and Butler, B. S.). Silver, copper, lead, and zinc in the Central States in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 1, pp. 59–125, October 31, 1919.
2. Gold and silver in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 1, pp. 727–781, 1 fig., 1 pl., July 15, 1920.
3. Gold, silver, copper, lead, and zinc in the Eastern States in 1919; *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 1, pp. 41–50, November 8, 1920.
4. Silver, copper, lead, and zinc in the Central States in 1919: *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 1, pp. 235–285, May 25, 1921.
5. Gold and silver in 1919: *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 1, pp. 665–709, 1 fig., 1 pl., October 31, 1921.
6. (and Begeman, F.). Silver, copper, lead, and zinc in the Central States in 1920: *U. S. Geol. Survey, Mineral Resources*, 1920, pt. 1, pp. 113–150, November 11, 1921.
7. Gold, silver, copper, lead, and zinc in the Eastern States in 1921; mines report: *U. S. Geol. Survey, Mineral Resources*, 1921, pt. 1, pp. 7–13, May 12, 1922.
8. Gold and silver in 1920 (general report): *U. S. Geol. Survey, Mineral Resources*, 1920, pt. 1, pp. 511–548, 1 fig., 1 pl., June 23, 1922.

Dunlop, John P.—Continued.

9. (and Begeman, F.). Silver, copper, lead, and zinc in the Central States in 1921; mines report: U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 75-105, August 15, 1922.
10. Gold and silver in 1921 (general report): U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 429-466, January 26, 1923.
11. Gold, silver, copper, lead, and zinc in the Eastern States in 1922 (mines report): U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 7-14, June 12, 1923.
12. (and Begeman, F.). Silver, copper, lead, and zinc in the Central States in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 137-168, October 10, 1923.
13. Secondary metals in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 173-191, November 7, 1923.
14. Gold and silver in 1922 (general report): U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 595-635, 1 fig., 1 pl., June 4, 1924.
15. Gold, silver, copper, lead, and zinc in the Eastern States in 1923; (mines report): U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 1-7, July 7, 1924.
16. (and Begeman, F.). Silver, copper, lead, and zinc in the Central States in 1923 (mines report): U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 47-78, September 30, 1924.
17. Gold and silver in 1923 (general report): U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 549-585, 1 fig., 1 pl., April 6, 1925.
18. Gold, silver, copper, lead and zinc in the Eastern States in 1924 (mine report): U. S. Geol. Survey, Mineral Resources, 1924, pt. 1, pp. 1-6, June, 1925.

Dunn, J. A.

1. Origin of metallic concentrations by magmation: Econ. Geology, vol. 19, no. 6, pp. 577-582, September-October, 1924.

Dunn, Paul Heaney.

1. Map of the areal and structural geology of Bourbon County, Kentucky: Kentucky Geol. Survey, ser. 6, 1928. Scale 1 inch=1 mile.

Dunn, Robert.

1. Geological mapping of Canadian Cordillera: Canadian Min. Jour., vol. 42, no. 36, pp. 726-727, September 9, 1921.
2. Discovery of bauxite in British Columbia: Canadian Min. Jour., vol. 44, no. 48, pp. 947-948, November 30, 1923.

Duparc, Louis.

1. Sur les gisements platinifères du Wyoming: Soc. phys. et d'hist. nat. de Genève, Compt. rend. des séances, vol. 41, no. 2, pp. 102-104, April-July, 1924.

Du Rietz, T. A.

1. The deformation of the pre-Cambrian peneplain of North America: Geol. Fören. Stockholm, Förh., Bd. 47, H. 2, pp. 250-257, map, March-April, 1925.

Du Toit, Alex L.

1. The origin of corundum aplite: Econ. Geology, vol. 23, no. 7, pp. 806-809, November, 1928.

Dutton, Clarence Edward, 1841-1912.

1. On some of the greater problems of physical geology: Washington Acad. Sci., Jour., vol. 15, no. 15, pp. 359-369, August 19, 1925. (Reprinted from Philos. Soc. Washington, Bull., vol. 11, pp. 51-64, 1889.)

Dwyer, J. L.

1. Seminole area subsurface formations [Oklahoma]: Oil and Gas Jour., vol. 26, no. 37, pp. 70, 148, February 2, 1928.

Dyer, William Spafford. See also Hume, 28; Parks, 8.

1. On *Conularia rugosa* from the Lockport limestone at Hamilton, Ontario: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 15, sec. 4, pp. 65-68, 2 pls., 1921.
2. The Minto coal basin of New Brunswick: Canadian Inst. Min. and Met., Monthly Bull. no. 145, pp. 251-275, 8 figs., May, 1924; Trans., vol. 27, pp. 385-409, 8 figs. [1925]; Canadian Min. Jour., vol. 45, no. 45, pp. 1091-1096, 4 figs., November 7, 1924.
3. The paleontology of the Credit River section [Ontario]; Ontario Dept. Mines, 32d Ann. Rept., vol. 32, pt. 7, pp. 47-88, 7 pls., 1925.
4. The stratigraphy and paleontology of Toronto and vicinity, Part VI; Stratigraphy and correlation of the Credit River section: Ontario Dept. Mines, 32d Ann. Rept., vol. 32, pt. 7, pp. 117-134, 2 figs., 1925.
5. Geology of the gypsum deposits of southwestern Ontario: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 2, pp. 35-58, 6 figs., 1925.
6. Bore hole records and their use in determination of favorable structure for natural gas accumulation: Intercolonial Gas Jour. of Canada, vol. 18, no. 2, pp. 64-66, 5 figs., February, 1925.
7. Oil and gas horizons in Ontario: Canadian Min. Jour., vol. 46, no. 20, pp. 494-496, May 15, 1925.
8. Minto coal basin, New Brunswick: Canada, Geol. Survey, Mem. 151, 42 pp., 3 figs., 2 maps, 1926.
9. Geological structure in the western end of Cypress Hills, Alberta: Canada, Geol. Survey, Summ. Rept., 1926, pt. B, pp. 15-29, 2 figs., 1927.
10. Oil and gas prospects in southern Saskatchewan: Canada, Geol. Survey, Summ. Rept., 1926, pt. B, pp. 30-38, 1 fig., 1927.
11. The Mesozoic clay deposits of the Mattagami and Missinaibi rivers, northern Ontario: Canadian Min. and Met. Bull., no. 196, pp. 989-1001, 2 pls. (incl. map), August, 1928.

Dyk, Karl. See Byerly, 18.

Eakin, Henry Miner.

1. The Porcupine gold placer district, Alaska: U. S. Geol. Survey, Bull. 699, 29 pp., 8 pls. (incl. maps), 1919. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 9, no. 11, p. 326, June 4, 1920.

Eakle, Arthur Starr.

1. New and rare minerals formed in limestone by contact metamorphism (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, pp. 162-163, March 31, 1920.
2. Vonsenite; a preliminary note on a new mineral [from Riverside, California]: Am. Mineralogist, vol. 5, no. 8, pp. 141-143, August, 1920.
3. Jurupaite, a new mineral [Crestmore, near Riverside, California]: Am. Mineralogist, vol. 6, no. 7, pp. 107-109, July, 1921.

Hakle, Arthur Starr—Continued.

4. Massive troilite from Del Norte County, California: *Am. Mineralogist*, vol. 7, no. 5, pp. 77-80, May, 1922.
5. Minerals of California: California State Min. Bur., Bull. no. 91, 328 pp., 1923.
6. Foshagite, a new silicate from Crestmore, California: *Am. Mineralogist*, vol. 10, no. 4, pp. 97-99, April, 1925.
7. Camsellite from California: *Am. Mineralogist*, vol. 10, no. 4, pp. 100-102, April, 1925.
8. Needed extension in mineralogic instruction: *Am. Mineralogist*, vol. 11, no. 3, pp. 45-52, March, 1926.
9. Famous mineral localities: Crestmore, Riverside County, California: *Am. Mineralogist*, vol. 12, no. 8, pp. 319-321, August, 1927.
10. Mineral names: *Am. Mineralogist*, vol. 13, no. 11, pp. 533-536, November, 1928.

Eardley-Wilmot, Vere Levinge. See also Cole, L. H., 12.

1. Graphite; recent developments in the Buckingham district [Quebec] Canadian Inst. Min. and Met. Bull. no. 110, pp. 539-555, June 1921; *Trans.*, vol. 24, pp. 124-142 [1922].
2. Canadian feldspar in 1922; fluorspar in 1922; graphite in Canada, 1922 talc and soapstone in Canada, 1922; the molybdenum situation in Canada in 1922: Canada, Mines Branch, *Summ. Rept.* 1922, pp. 21-44, 1924.
3. Natural abrasive materials in Canada: Canada, Mines Branch, *Investigations of Mineral Resources and the Mining Industry*, 1923, pp. 12-15, 1924.
4. Molybdenum and its future prospects in Canada: *Canadian Min. Jour.* vol. 45, no. 33, pp. 787-788, August 15, 1924.
5. The origin and uses of diatomaceous earth: *Canadian Min. Jour.*, vol. 45, no. 38, pp. 918-920, September 19, 1924.
6. Molybdenum; metallurgy and uses and the occurrence, mining, and concentration of its ores: Canada, Dept. Mines, Mines Branch, 20 pp., 55 figs., 11 pls., maps, 1925. [Pub. no. 592.]
7. Abrasives; Part II, Corundum and diamond: Canada, Dept. Mines, Mines Branch, 51 pp., 6 figs., 5 pls., 1927. [Pub. no. 675.]
8. Abrasives; Part III, Garnet: Canada, Dept. Mines, Mines Branch, 69 pp., 17 figs., 4 pls., 1927. [Pub. no. 677.]
9. Diatomite, its occurrence, preparation, and uses: Canada, Dept. Mines, Mines Branch, 182 pp., 31 figs., 15 pls. map, 1928. [Pub. no. 691.]

Earle, Kenneth Wilson.

1. Report on the geology of Antigua. 28 pp., Government Printing Office, Antigua, Leeward Island, 1923.
2. Geological survey of the Windward and Leeward Islands: The geology of St. Lucia. 4 pp., Castries, Ste. Lucie, 1923. [Not seen.]
3. Preliminary report on geology of Windward and Leeward islands (abstract): *Pan-Am. Geologist*, vol. 40, no. 4, p. 320, November, 1923; *British Assoc. Adv. Sci.*, Rept. 91st Meeting, Liverpool, 1923, p. 44, 1924.
4. The geology of St. Lucia: *Saint Lucia Gazette*, vol. 93, no. 16, pp. 107-111, May 10, 1924.
5. The geology of the British Virgin Islands: *Geol. Mag.*, vol. 61, no. 4, pp. 339-351, 1 fig., 1 pl. (maps), August, 1924.

Earle, Kenneth Wilson—Continued.

6. Reports on the geology of St. Kitts-Nevis, British West Indies, and the geology of Anguilla, British West Indies. 50 pp., published by the Crown Agents for the Colonies, London [n. d., 1924?].
7. Geological survey of the Windward and Leeward Islands; The geology of St. Vincent and the neighboring Grenadines, 8 pp., Kingston, 1924. [This and an earlier edition, Castries, 1923, not seen.]
8. Geological survey of Grenada and the (Grenada) Grenadines. 9 pp., St. George, 1924.
9. The geology of the West Indies [reply to T. Wayland Vaughan's criticisms]: *Geol. Mag.*, vol. 64, pp. 191–192, April, 1927.
10. Report on the geology of Saint Vincent and the neighboring Grenadines. Geological Survey of the Windward and Leeward Islands. 8 pp., Kingston, Government Printing Office, 1928. [Original edition, 1924, not seen.]
11. Geological notes on the Island of Dominica, B. W. I.: *Geol. Mag.*, vol. 65, pp. 169–187, 2 figs., April, 1928.

Easton, H. D.

1. Is Mississippi to be an oil State?: *Oil Weekly*, vol. 23, no. 5, pp. 12, 26, 28, 2 figs., October, 1922.
2. Oil and gas possibilities in the Trinity sand in the Louisiana-Arkansas area: *Oil Weekly*, vol. 38, no. 2, pp. 27–28, 66–69, 2 figs., July 3, 1925, vol. 46, no. 3, pp. 39–41, 1 fig., July 8, 1927.

Eaton, Arthur. See Lee, W. T., 3.

Eaton, Frederick S.

1. Mineral localities of Connecticut: *Rocks and Minerals*, vol. 2, no. 4, pp. 141–142, December, 1927.

Eaton, George F.

1. John Day Felidae in the Marsh collection: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 425–452, 12 figs., December, 1922.
2. Vertebrate fossils from the Mina Erupción [Chihuahua, Mexico]: *Am. Jour. Sci.*, 5th ser., vol. 6, pp. 229–238, 9 figs., September, 1923.

Eaton, Harry Nelson. See also Miller, B. L., 9.

1. Some subordinate ridges of Pennsylvania: *Jour. Geology*, vol. 27, no. 2, pp. 121–127, 1919.
2. Notes on certain conglomeratic structures in limestones in central Pennsylvania: *Science*, new ser., vol. 49, p. 474, May 16, 1919.
3. The Oriskany sandstone faunule at Oriskany Falls, New York (abstract): *Science*, new ser., vol. 51, p. 493, May 14, 1920; *Am. Jour. Sci.*, 5th ser., vol. 1, pp. 427–430, May, 1921.
4. The present status of the Medina problem in southeastern Pennsylvania (abstract): *Science*, new ser., vol. 56, p. 175, August 11, 1922.
5. A Vernon shale (Silurian) fauna in central New York: *New York State Mus. Bull.*, no. 253, pp. 111–118, 1 pl., July, 1924.
6. Structural relations of the igneous rocks of the Wamsutta red beds, Massachusetts (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 165–166, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 157, March, 1925.
7. Geological excursion of New York State colleges: *Science*, new ser., vol. 62, pp. 431–432, November 13, 1925.

Eaton, J. E.

1. Structure of Los Angeles Basin and environs: *Oil Age*, Los Angeles, California, vol. 20, no. 6, pp. 8-9, 52, 2 figs., December, 1923; vol. 21, no. 1, pp. 16-18, 52, 54, 3 figs., January, 1924.
2. The Ventura oil field, California; a brief review of its stratigraphy and structure: *Oil Bull.*, vol. 12, no. 5, pp. 521-524, 2 figs., May, 1926.
3. A contribution to the geology of Los Angeles Basin, California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 8, pp. 753-767, 2 figs. (map and sections), August, 1926; *Oil Bull.*, vol. 12, no. 9, pp. 970-977, 1037, 2 figs., September, 1926.
4. Geology and oil fields of Ventura Basin, Ventura County, California: *Oil Age*, vol. 23, no. 11, pp. 16-18, map, November, 1926.
5. The Potrero oil field [California]: *Oil Bull.*, vol. 13, no. 11, pp. 1154, 1215, November, 1927.
6. Divisions and duration of the Pleistocene in southern California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 2, pp. 111-141, 3 figs., February, 1928.
7. Pleistocene of southern California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 5, pp. 559-560, May, 1928.
8. San Clemente well proves new high-gravity oil field in west part of Los Angeles Basin [California]; *Petroleum World*, Los Angeles, Calif., vol. 13, no. 8, pp. 52-53, 2 figs., August, 1928.
9. How California has conserved oil: *Oil Bull.*, vol. 14, no. 10, pp. 1030-1032, 1037, 2 figs., October, 1928.
10. Notes on the principle and theory of isostasy: *Am. Assoc. Petroleum Geologists, Bull.* vol. 12, no. 12, pp. 1163-1166, December, 1928.

Ebert, Fred Charles.

1. Records of water levels in wells in southern California: *U. S. Geol. Survey, Water-Supply Paper* 468, 156 pp., 1 fig., 4 pls. (incl. map), 1921.

Eby, George.

1. Earth disturbances at Dixie, Washington, September 14, 1921: *Seismol. Soc. America, Bull.*, vol 11, nos. 3-4, pp. 195-196, September-December, 1921.

Eby, James Brian.

- 1 (with chapters by M. R. Campbell and G. W. Stose). The geology and mineral resources of Wise County and the coal-bearing portion of Scott County, Virginia: *Virginia Geol. Survey, Bull.* no. 24, 617 pp., 55 figs., 45 pls. (incl. maps), 1923.
2. The possibilities of oil and gas in southwest Virginia as inferred from isocarbs: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 4, pp. 421-426, 1 fig., July-August, 1923.
3. The carbonization of some Colorado coals by igneous intrusion (abstract): *Washington Acad. Sci., Jour.*, vol. 14, no. 15, p. 376, September 19, 1924.
4. Contact metamorphism of some Colorado coals: *Am. Inst. Min. and Met. Eng., Trans.* [preprint], no. 1401, 5 pp., 2 figs., January, 1925; *Trans.*, vol. 71, pp. 246-252, 1925; abstract, *Mining and Metallurgy*, vol. 6, no. 328, p. 620, December, 1925.
- 5 (and Campbell, M. R.). The Virginia coal fields: *U. S. Bur. Mines, Tech. Paper* 365, pp. 1-5, 1926.
6. Geology of coal formation [of West Virginia]: *U. S., Bur. Mines, Tech. Paper* 405, pp. 1-5, 1928.

Eby, John H.

1. Bottom in ore deposits of Coeur d'Alene [region, Idaho] : Pan-Am. Geologist, vol. 49, no. 3, pp. 179-182, April, 1928.

Eckel, Edwin Clarence.

1. Cements, limes, and plasters; their materials, manufacture, and properties. 2d edition, 655 pp., 158 figs., New York, John Wiley & Sons, 1922.
2. Cements, limes, and plasters; their materials, manufacture, and properties. 3d edition, 699 pp., 161 figs., New York, John Wiley & Sons, 1928.

Eckes, Charles R.

1. Description of cuttings from the Duffer wells, Ranger field [Texas] (with discussion) : Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 39-43, 1919.

Eckis, Rollin.

1. Alluvial fans of the Cucamonga district, southern California : Jour. Geology, vol. 36, no. 3, pp. 225-247, 8 figs., April-May, 1928.

Eddingfield, F. T. See Harder, 4.

Eddington, Arthur Stanley.

1. The borderland of astronomy and geology : Smithsonian Inst., Ann. Rept. 1923, pp. 195-202, 1925.

Ede, J. A.

1. Mineral resources of the La Salle district [Illinois] : Am. Inst. Min. and Met. Eng., Bull. no. 153, pp. 2609-2630, 8 figs., September, 1919; Trans., vol. 63, pp. 244-265, 8 figs., 1920.

Edson, Fanny Carter.

1. Notes on the Simpson formation, Oklahoma (with discussion) : Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 5, pp. 558-564, 3 figs., September-October, 1923.
2. Criteria for the recognition of heavy minerals occurring in the Mid-Continent field : Oklahoma Geol. Survey, Bull. no. 31, 32 pp., 2 pls., December, 1925.
3. Ordovician correlations in Oklahoma : Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 9, pp. 967-975, September, 1927.

Edwards, E. M. See Kindle, 28.

Edwards, Everett C. See also Twenhofel, 8, 11.

- 1 (and Orynski, Leonard W.). Westbrook field, Mitchell County, Texas : Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 5, pp. 467-476, 3 figs. May, 1927.
2. Stratigraphic position of the Big Lime of west Texas : Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 7, pp. 721-728, 1 fig., 1 pl., July, 1927; Oil Weekly, vol. 46, no. 9, pp. 146-148, 150, 152, 2 figs., August 19, 1927.

Edwards, Ira.

1. A visit to the petrified forests of Arizona : Milwaukee, Public Mus., Yearbook, 1923, vol. 3, pp. 164-170, 5 figs., April 29, 1925.
2. The sea caves of Devil's Island : Milwaukee, Public Mus., Yearbook, 1924, vol. 4, pp. 94-98, 4 figs., October 9, 1926.
3. The new geological groups [in the Public Museum of the City of Milwaukee] : Milwaukee, Public Mus., Yearbook, 1924, vol. 4, pp. 122-129, 5 figs., October 9, 1926.

Edwards, Ira—Continued.

4. Underground geology at the Endless Caverns, New Market, Virginia: Milwaukee, Public Mus., Yearbook, 1925, vol. 5, pp. 82-104, 11 figs., March 10, 1927.
5. A geological expedition to Rainbow Natural Bridge, Utah: Milwaukee, Public Mus., Yearbook, 1925, vol. 5, pp. 104-121, 9 figs., March 10, 1927.

Edwards, W. N.

1. Origin of certain filamentous forms from Eocene beds: Nature, vol. 112, p. 9, July 7, 1923.
2. On the cuticular structure of the Devonian plant *Psilophyton*: Linnean Soc., Jour., Botany vol. 46, no. 310, pp. 377-385, 5 figs., 1 pl., April 16, 1924.

Eggleston, Julius Wooster.

1. Eruptive rocks at Cuttingsville, Vermont: Vermont, State Geologist, 11th Rept., pp. 167-193, 2 pls. (incl. map) [1919].

Ehlers, George Marion. See also Cook, C. W., 8; Ruedemann, 15.

1. An interesting illustration of a process of destruction of a glaciated surface: Michigan Acad. Sci., 20th Ann. Rept., pp. 59-63, 2 pls., 2 figs., 1918.
2. *Heterolasma foerstei*, a new genus and species of Tetracoralla from the Niagaran of Michigan: Am. Jour. Sci., 4th ser., vol. 48, pp. 461-467, 3 figs., December, 1919.
3. Notes on the stratigraphy of the Racine formation of the northern peninsula of Michigan: Michigan Acad. Sci., 21st Ann. Rept., pp. 87-90, 1920.
4. Niagaran rocks of the northern peninsula of Michigan (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 129-130, March 31, 1921.
5. (and Hussey, R. C.). A new gastropod and a new cephalopod from the Devonian of Michigan: Michigan Acad. Sci., Papers, vol. 1, pp. 248-252, 2 pls., 1923.
6. (and Leighly, J. B.). *Lipsanocystis traversensis*, a new cystid from the Devonian of Michigan: Michigan Acad. Sci., Papers, vol. 2, pp. 155-158, 3 figs., 1923.
7. The presence of Cataract strata in Michigan supported by fossil evidence: Michigan Acad. Sci., Papers, vol. 3, pp. 281-283, 1924.
8. An Ordovician reef on Sulphur Island, Lake Huron: Michigan Acad. Sci., Arts and Letters, Papers, vol. 4, pt. 1, pp. 425-429, 1 fig., 3 pls., February, 1925.
9. Two new crinoids from the Devonian of Michigan: Michigan, Univ., Mus. Geology, Contr., vol. 2, no. 6, pp. 99-104, 1 pl., June 3, 1925; abstract, Pan-Am. Geologist, vol. 44, no. 2, p. 160, September, 1925.
10. (and Chang, M. S.). New brachiopods from Mississippian rocks of Kentucky (abstract): Pan-Am. Geologist, vol. 44, no. 2, p. 160, September, 1925.
11. (and Chang, M. S.). New brachiopods from the Warsaw formation of Wayne County, Kentucky: Michigan, Univ., Mus. Geology, Contr., vol. 2, no. 7, pp. 105-110, 1 pl., July 15, 1926.
12. (and Cooley, Mary E.). Discovery of a Hamilton fauna in southeastern Michigan: Michigan, Univ., Mus. Geology, Contr., vol. 2, no. 13, pp. 231-236, August 3, 1927.

Ehrenberg, Kurt.

1. The crinoid occurrence at Crawfordsville, Indiana: *Am. Mus. Novitates*, no. 204, 12 pp., 2 figs., December 24, 1925.
2. Zur Frage der biologischen Deutung der (*Camerocrinus*-) Wurzeln (Lobolithen) von *Scyphocrinus*: *Palaeont. Zeitschr.*, Bd. 8, H. 3, pp. 199-220, 4 figs., October 9, 1926.

Eichelberger, O. H. See Thompson, S. A., 1.

Eichler, A.

1. (and others). Linneit von Littfeld in Westfalen und zinkhaltiger Kupferglanz von Sinaloa in Mexiko: *Centralbl. Mineralogie*, no. 8, pp. 225-227, April 15, 1922.

Ekblaw, George E.

1. Paleozoic karst topography: *Illinois State Acad. Sci., Trans.*, vol. 17, pp. 208-212, 1925.
2. Post-Chester, pre-Pennsylvanian faulting in the Alto Pass area: *Illinois State Acad. Sci., Trans.*, vol. 18, pp. 378-382, 1 fig., 1925.
3. (and Athy, L. F.). Glacial Kankakee torrent in northeastern Illinois: *Geol. Soc. America, Bull.*, vol. 36, no. 2, pp. 417-427, 4 figs., June 30, 1925; abstract, no. 1, p. 155, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 151, March, 1925.

Ekblaw, W. Elmer.

1. Economic geology: *Am. Year Book*, 1927, pp. 597-599, 1928.

Eldridge, W. J. See Robinson, W. I., 4.

Elledge, Emmett R. See also Moore, R. C., 5.

1. The economic geology of the Arkansas City district: *Kansas, State Geol. Survey, Bull.* 8, pp. 5-37, 2 figs., 11 pls. (incl. map), 1921.

Elles, Gertrude L.

1. Evolutional paleontology in relation to the lower Paleozoic rocks: *Pan-Am. Geologist*, vol. 40, no. 4, pp. 259-288, November, 1923; *British Assoc. Adv. Sci., Rept. 91st Meeting*, 1923, pp. 83-107, 5 figs., 1924.

Ellis, Arthur Jackson, 1885-1920.

1. (and Lee, Charles H.). Geology and ground waters of the western part of San Diego County, California: *U. S. Geol. Survey, Water-Supply Paper* 446, 321 pp., 47 pls. (incl. maps), 18 figs., 1919; abstract, *Washington Acad. Sci., Jour.*, vol. 11, no. 10, pp. 235-236, May 19, 1921.
2. Mineral waters in 1917: *U. S. Geol. Survey, Mineral Resources*, 1917 pt. 2, pp. 483-520, April 21, 1919.
3. Mineral waters in 1918: *U. S. Geological Survey, Mineral Resources*, 1918, pt. 2, pp. 495-531, 1 pl. (map), March 19, 1920.
4. Mineral waters in 1919: *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 2, pp. 115-149, January 21, 1921.
5. (and Meinzer, O. E.). Ground water in Musselshell and Golden Valley counties, Montana: *U. S. Geol. Survey, Water-Supply Paper* 518, 92 pp., 11 figs., 5 pls. (incl. map), 1924.

Ellis, Edwin E.

1. Occurrence of commercial zinc and lead ore bodies in the Tri-State district: *Eng. and Min. Jour.-Press*, vol. 121, no. 5, pp. 209-210, January 30, 1926.

Ellis, Ernest W. See Kirkham, 7.

Ellis, Robert Walpole.

1. The oil situation in New Mexico: New Mexico, State Univ., Bull. 101 (Geol. Series 3), 48 pp., map, December, 1920.
2. Geology of the Sandia Mountains: New Mexico, State Univ., Bull. no. 4, (Geol. ser. 3), 45 pp., 2 figs., 4 pls., map, September, 1922.
3. Oil and gas in New Mexico in 1923: New Mexico, State Univ., Bull. no. 112, Geol. ser. 3, 29 pp., May, 1923.
4. Tables for determining common minerals and rocks: New Mexico, State Univ., Bull., Geol. ser., vol. 3, no. 6, 46 pp., September, 1923.
5. Geologic map of the State of New Mexico. Scale, 1 inch=12 miles. State University of New Mexico, Albuquerque, 1925.

Ellison, Robert S.

1. What the oil company expects of the geologist: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 6, pp. 516-522, November-December, 1922.

Ellisor, Alva Christine. See also Applin, E. R., 1.

1. Species of *Turritella* from the Buda and Georgetown limestones of Texas: Texas, Univ., Bull. no. 1840, 26 pp., 4 pls., July 15, 1918.
2. The age and correlation of the chalk at White Cliffs, Arkansas, with notes on the subsurface correlations of northeast Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 8, pp. 1152-1164, 2 pls., November, 1925.
3. Coral reefs in the Oligocene of Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 10, pp. 976-985, 4 figs., October, 1926.

Ells, Sydney Clarke.

1. The bituminous sands of northern Alberta (abstract): Geol. Mag., new ser., dec. 6, vol. 6, p. 142, March, 1919.
2. Cretaceous shales of Manitoba and Saskatchewan as a possible source of crude petroleum: Canada, Mines Branch, Summ. Rept., 1921, pp. 34-41, 2 maps, 1923.
3. Oil shales of Canada: Canada, Mines Branch, Summ. Rept., 1921, pp. 41-55, 1923.
4. Bituminous sands of northern Alberta: Canada, Mines Branch, Summ. Rept., 1922, pp. 44-46, 1924.
5. Bituminous sands of northern Alberta: Canada, Mines Branch, Investigations of Mineral Resources and the Mining Industry, 1923, pp. 4-11, 1924.
6. Bituminous sands of northern Alberta: Canadian Min. Jour., vol. 45, nos. 13 and 17, pp. 298-304, 400-403, 6 figs., March 28 and April 25, 1924; Inst. Petroleum Technologists, Jour., vol. 10, no. 43, pp. 358-359, June; no. 45, pp. 710-717, 2 pls., September, 1924.
7. Oil shales of Canada. In McKee, Ralph H., Shale oil., pp. 43-60, New York, 1925.
8. Bituminous sands of northern Alberta; occurrence and economic possibilities; report on investigations to the end of 1924: Canada, Dept. Mines, Mines Branch, 244 pp., 47 figs., 43 pls., 12 maps and sections, 1926. [Pub. no. 632.]
9. Bituminous sands of northern Alberta; their character and economic importance: Canadian Inst. Min. and Met., Trans., vol. 30, pp. 646-670, 7 figs. [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc., pt. 3, pp. 130-154, 7 figs., 1928.

- Ellsworth, H. V. See also Johnston, R. A. A., 1; Palache, 31; Poitevin, 5, 7.
1. (and Poitevin, E.). Camsellite, a new borate mineral from British Columbia, Canada: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 15, sec. 4, pp. 1-8, 3 pls., 1921.
 2. Radium-bearing pegmatites of Ontario: Canada, Geol. Survey, Summ. Rept., 1921, pt. D, pp. 51-70, 2 figs., 2 pls., 1922.
 3. Recent discoveries of radioactive minerals in Ontario: Canada, Geol. Survey, Summ. Rept., 1923, pt. C 1, pp. 6-20, 2 figs.; 5 pls., 1924.
 4. The blue corundum of the Bancroft area [Hastings County, Ontario]: Canadian Min. Jour., vol. 45, no. 41, pp. 1009-1010, 1 fig., October 10, 1924.
 5. Atomic disintegration as a measure of geologic time: Pan-Am. Geologist, vol. 42, no. 4, pp. 273-280, November, 1924.
 6. Radioactive minerals as geological age indicators: Am. Jour. Sci., 5th ser., vol. 9, pp. 127-144, February, 1925; abstract, British Assoc. Adv. Sci., Rept. 92d Meeting, p. 390, 1925; Pan-Am. Geologist, vol. 42, no. 4, p. 320, November, 1924.
 7. Canadian pegmatites and their minerals: Canadian Min. Jour., vol. 46, no. 9, pp. 224-226, February 27, 1925.
 8. Duration of pre-Cambrian time: Pan-Am. Geologist, vol. 43, no. 2, pp. 99-104, March, 1925.
 9. Chemistry of the potash-bearing horizon of the Malagash salt deposit, Nova Scotia: Canada, Geol. Survey, Summ. Rept., 1924, pt. C. pp. 181-198, 1926.
 10. (and Walker, John F.). Knopite and magnetite occurrence, southeastern British Columbia: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 230-232, 1926.
 11. Euxenite-polycrase from Mattawan township, Nipissing district, Ontario: Am. Mineralogist, vol. 11, no. 12, pp. 329-331, December, 1926.
 12. Toddite, a new uranium mineral from Sudbury district, Ontario: Am. Mineralogist, vol. 11, no. 12, pp. 332-334, December, 1926.
 13. Ellsworthite crystals from Haliburton County, Ontario: Am. Mineralogist, vol. 12, no. 2, pp. 48-53, 1 fig., February, 1927.
 14. Lyndochite, a new mineral of the euxenite-polycrase group from Lyndoch township, Renfrew County, Ontario: Am. Mineralogist, vol. 12, no. 5, pp. 212-218, 2 figs., May, 1927.
 15. A new analysis of the Maberly, Ontario, euxenite: Am. Mineralogist, vol. 12, no. 10, pp. 365-367, October, 1927.
 16. I, Uranothorite from the MacDonald mine, Hybla, Ontario; II, Alpha and beta hyblite, new sulphatic alteration products of the Hybla thorite: Am. Mineralogist, vol. 12, no. 10, pp. 368-372, 1 fig., October, 1927.
 17. A mineral related to a samarskite from the Woodcox mine, Hybla, Ontario: Am. Mineralogist, vol. 13, no. 2, pp. 63-65, February, 1928.
 18. A mineral related to samarskite from Parry Sound, Ontario: Am. Mineralogist, vol. 13, no. 2, pp. 66-68, February, 1928.
 19. I, Thucholite, a remarkable primary carbon mineral from the vicinity of Parry Sound, Ontario (with contribution, The volatiles in thucholite, by E. S. Shepherd); II, Cyrtolite intergrowth associated with the Parry Sound thucholite: Am. Mineralogist, vol. 13, no. 8, pp. 409-441, 3 figs., August, 1928.
 20. Thucholite and uraninite from the Wallingford mine near Buckingham, Quebec: Am. Mineralogist, vol. 13, no. 8, pp. 442-448, 2 figs., August, 1928.

Ellsworth, H. V.—Continued.

21. Euxenite from Sabine Township, Nipissing district, Ontario: *Am. Mineralogist*, vol. 13, no. 9, pp. 484-487, 1 fig., September, 1928.

Elmore, Clarence Jerome.

1. The diatoms (*Bacillarioideae*) of Nebraska: *Nebraska Geol. Survey*, vol. 8, 214 pp., 23 pls. [no date, 1926?].

Elsing, Morris Jesup.

1. The Bisbee mining district [Arizona]: *Eng. and Min. Jour.-Press*, vol. 115, no. 4, pp. 177-184, 5 figs., January 27, 1923.

Elworthy, Reginald Thomas.

1. Natural gas in Alberta: Canada, Mines Branch, Investigations of Mineral Resources and the Mining Industry, 1923, pp. 16-46, 1924.
2. Helium in Canada: *Canadian Min. Jour.*, vol. 45, no. 51, pp. 1233-1235, December 19, 1924.
3. New development in the Turner Valley oil field, Alberta: *Inst. Petroleum Technologists, Jour.*, vol. 11, no. 49, pp. 200-201, April, 1925.
4. Natural gas and petroleum in northern Alberta: Canada, Dept. Mines, Mines Branch, Investigations of Mineral Resources . . . 1924, pp. 103-115, 1926.
5. Helium in Canada: Canada, Dept. Mines, Mines Branch, 64 pp., 2 pls., 2 maps, 1926. [Pub. no. 679.]
6. Hot springs in western Canada; their radioactive and chemical properties: Canada, Dept. Mines, Mines Branch, Investigations of mineral resources and the mining industry, 1925, pp. 1-33, 1926.
7. Natural gas in New Brunswick: Canada, Dept. Mines, Mines Branch, Investigations of mineral resources and the mining industry, 1925, pp. 34-38, 1926.
8. Natural gas in Canada: *Canadian Inst. Min. and Met., Trans.*, vol. 30, pp. 680-686 [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc., pt. 3, pp. 164-170, 1928.

Ely, Fred B.

1. Concerning theories [respecting occurrence, etc., of petroleum]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 1, pp. 94-96, January-February, 1924.

Emerson, Benjamin Kendall. See also Foye, 6.

1. William Bullock Clark (1860-1917): *Am. Acad. Arts, Proc.*, vol. 54, no. 6, pp. 412-415, September, 1919.

Emerson, Frederick Valentine, 1871-1919.

1. Some Port Hudson outcrops in Louisiana: *Science*, new ser., vol. 50, p. 460, November 14, 1919.
2. *Agricultural geology*. 319 pp., 270 figs., New York, John Wiley & Sons, 1920.
3. *Agricultural geology*; revised by John E. Smith. 377 pp., 271 figs., New York, John Wiley & Sons, 1928.

Emerson, O. H. See also Finch, 6.

1. The formation of aa and pahoehoe: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 109-114, August, 1926.

Emery, Alden H. See Bray, 1.

Emery, W. B. See Redwood, 1.

Emig, William Harrison.

1. Mosses as rock builders: Oklahoma, Univ., Bull. (Proc. Oklahoma Acad. Sci., 1910-1920), new ser. no. 220, pp. 38-40, July 15, 1921.

Emmens, Newton W.

1. The Wainwright oil and gas field [Alberta]: Canadian Min. Jour., vol. 46, no. 5, pp. 120-124, no. 6, pp. 145-150, 10 figs., January 30, and February 6, 1925.
2. Mineral resources of the Lardeau and Trout Lake mining divisions of British Columbia: Canadian Min. Jour., vol. 47, no. 1, pp. 5-8, 3 figs., January 1, no. 2, pp. 36-38, 2 figs., January 8, 1926.

Emmet, W. L. R.

1. Formation of the earth and moon. 15 pp., 2 figs. [priv. pub., 1927(?). No particulars given as to time or place of publication].
2. Formation of the moon and earth: Sci. Monthly, vol. 24, no. 1, pp. 15-24, 3 figs., January, 1928.

Emmons, Richard Conrad. See also Winchell, A. N., 18.

1. Concerning inclusions in igneous magmas: Jour. Geology, vol. 34, no. 5, pp. 422-428, July-August, 1926.
2. (and Stockwell, C. H., and Jones, R. H. B.). Argentite and acanthite: Am. Mineralogist, vol. 11, no. 12, pp. 326-328, 1 fig., December, 1926.
3. Wakomata Lake map area, Algoma district, Ontario: Canada, Geol. Survey, Summ. Rept., 1926, pt. C, pp. 1-15, 1 fig., map, 1927.
4. Diabase differentiation: Am. Jour. Sci., 5th ser., vol. 13 pp. 73-82, 3 figs., January, 1927.
5. A diabase chert breccia: Jour. Geology, vol. 36, no. 6, pp. 569-572, August-September, 1928.
6. The double dispersion method of mineral determination: Am. Mineralogist, vol. 13, no. 10, pp. 504-515, 5 figs., October, 1928.
7. Studies in mineral separation in a finely divided state: Am. Jour. Sci., 5th ser., vol. 16, pp. 423-445, 8 figs., November, 1928.
8. Notes on the precipitation of calcium carbonate: Jour. Geology, vol. 36, no. 8, pp. 735-742, 5 figs., November-December, 1928.

Emmons, Samuel Franklin.

1. (and Irving, J. D., and Loughlin, G. F.). Geology and ore deposits of the Leadville mining district, Colorado: U. S. Geol. Survey, Prof. Paper 148, 368 pp., 111 figs., 70 pls., 1927.

Emmons, William Harvey. See also Lindgren, 18; Udden, Johan A., 2.

1. Experiments on accumulation of oil in sands (abstract): Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, pp. 103-104, January-February, 1921.
2. Geology of petroleum. 610 pp., 254 figs., New York, McGraw-Hill Book Company, 1921.
3. General economic geology; a textbook. 516 pp., 257 figs., New York, McGraw-Hill Book Company, 1922.
4. (and Larsen, Esper S.). Geology and ore deposits of the Creede district, Colorado: U. S. Geol. Survey, Bull. 718, 198 pp., 32 figs., 12 pls. (incl. maps), 1923.
5. Geology of prospecting: Eng. and Min. Jour.-Press, vol. 115, no. 3, pp. 122-123, January 20, 1923.

Emmons, William Harvey—Continued.

6. Primary downward changes in ore deposits (with discussion by J. E. Spurr): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 70, pp. 964-997, 13 figs., 1924; [preprint] no. 1319, 29 pp., 13 figs., March, 1924; abstract, *Mining and Metallurgy*, vol. 5, no. 207, pp. 140-141, March, 1924; no. 209, pp. 245-246, May, 1924.
7. The major hinge zone of Tertiary deformation and some of its precious metal deposits: *International Geol. Cong., 13th Sess., Belgium, 1922*, fasc. 3, pp. 1521-1532, 1925.
8. (and Laney, F. B.). *Geology and ore deposits of the Ducktown mining district, Tennessee* (with the active collaboration of Arthur Keith): *U. S. Geol. Survey, Prof. Paper 139*, 114 pp., 15 figs., 42 pls. (incl. map), 1926.
9. Relations of metalliferous lode systems to igneous intrusives: *Am. Inst. Min. and Met. Eng., Pam.* no. 1571, 42 pp., 23 figs., June, 1926; *Trans.*, vol. 74, pp. 29-70, 23 figs., 1926; abstract, *Mining and Metallurgy*, vol. 7, no. 234, p. 263, June, 1926.
10. Zonal arrangement of metalliferous lodes (abstract): *Pan-Am. Geologist*, vol. 47, no. 1, pp. 75-76, February, 1927.
11. Relations of the disseminated copper ores in porphyry to igneous intrusives (with discussion): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 75, pp. 797-815, 5 figs., 1927; [preprint] no. 1638, 13 pp., 5 figs., February, 1927; abstract, *Mining and Metallurgy*, vol. 8, no. 242, p. 88, February, 1927.
12. The state and density of solutions depositing metalliferous veins: *Am. Inst. Min. and Met. Eng., Tech. Pub.* no. 71, 13 pp., 6 figs., February, 1928; *Trans.*, vol. 76, pp. 308-320, 6 figs., 1928; abstract, *Mining and Metallurgy*, vol. 9, no. 254, pp. 82-83, February, 1928.

Emory, Lloyd T.

1. Bauxite, its supply and manner of formation: *Eng. and Min. Jour.*, vol. 123, no. 19, p. 771, May 7, 1927.

Engel, Rene.

1. Preliminary notes on the geology of the Elsinore Valley (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 267, March 30, 1928.

Engineering and Mining Journal.

1. The origin of iron ores: *Eng. and Min. Jour.*, vol. 109, p. 1053, May 8, 1920.
2. Applications of the zonal theory: *Eng. and Min. Jour.-Press*, vol. 117, no. 10, p. 393, March 8, 1924.
3. The microscope and the decadence of geology: *Eng. and Min. Jour.-Press*, vol. 118, no. 3, pp. 82-83, July 19, 1924.
4. Development of the ore magma theory: *Eng. and Min. Jour.-Press*, vol. 119, no. 22, pp. 874-875, May 30, 1925.
5. The ghost of the molten magma: *Eng. and Min. Jour.-Press*, vol. 120, no. 9, p. 322, August 29, 1925.
6. The natural history of the pegmatites: *Eng. and Min. Jour.-Press*, vol. 120, no. 11, pp. 402-403, September 12, 1925.
7. Mining for shooting stars [Meteor Crater, Arizona]: *Eng. and Min. Jour.-Press*, vol. 120, no. 26, pp. 1001-1002, December 26, 1925.
8. Ore deposition or ore injection: *Eng. and Min. Jour.-Press*, vol. 121, no. 12, p. 475, March 20, 1926.
9. Essentials of the ore magma theory: *Eng. and Min. Jour.-Press*, vol. 121, no. 16, pp. 634-635, April 17, 1926.

Engineering and Mining Journal—Continued.

10. Ore deposition in the Tri-State district: Eng. and Min. Jour.-Press, vol. 121, no. 23, p. 913, June 5, 1926.
11. Dikes and ores of the Mississippi Valley: Eng. and Min. Jour., vol. 123, no. 3, p. 82, January 15, 1927.

English, George Letchworth.

1. The scientific valuation of minerals: Am. Mineralogist, vol. 12, no. 5, pp. 197-209, May, 1927.

English, Leon.

1. Robberson oil field, Garvin County, Oklahoma: Oklahoma Acad. Sci., Proc., vol. 2 (Oklahoma, Univ., Bull., new ser. no. 247), pp. 85-86, October 1, 1922.

English, Walter Atheling. See also Arnold, 4.

1. Geology and petroleum resources of northwestern Kern County, California: U. S. Geol. Survey, Bull. 721, 48 pp., 2 figs., 2 pls. (incl. map), 1921.
2. Some plane-table methods (with discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 1, pp. 47-54, 3 figs., January-February, 1924.
3. Geology and oil resources of the Puente Hills region, southern California: U. S. Geol. Survey, Bull. 768, 110 pp., 3 figs., 14 pls. (incl. maps), 1926.
4. Notes on the McKittrick, California, oil field: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 6, pp. 617-620, 1 fig., June, 1927.
5. Outline of the geology of the San Joaquin Valley oil fields [California]: Oil Bull., vol. 14, no. 4, pp. 362-367, April, 1928.

Erickson, E. Theodore. See also DeGolyer, 9.

1. Tschermigite (ammonium alum) from Wyoming: Washington Acad. Sci., Jour., vol. 12, no. 3, pp. 49-54, February 4, 1922.

Erlenborn, W.

1. Report on the feldspar deposits of Quetachou Manicouagan Bay: Quebec, Dept. Colonization . . . , Report on Mining Operations . . . 1924, pp. 93-111, 2 pls. (incl. map), 1925.

Erni, Chester Pralle.

1. (and Beals, C. C.). Soil survey of Carroll County :Indiana, Dept. Geology and Nat. Res., 41st Ann. Rept., pp. 45-66, map, 1917.

Ernst, Walter S.

1. Statistics of the mineral production of Alabama for 1922: Alabama Geol. Survey Bull. no. 27, 139 pp., 1924.

Esarey, Ralph E.

1. Notes on the relation of the Mt. Carmel and Heltonville faults to the Dennison anticline [Lawrence County]: Indiana Acad. Sci., Proc., vol. 34, pp. 135-139, 1925.
2. The Tri-County oil field of southwestern Indiana: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 6, pp. 601-610, 6 figs., June, 1927.
3. The oil shales of Indiana: Min. Cong. Jour., vol. 14, no. 1, pp. 5-7, 11, 7 figs., January, 1928.

Escher, Berend George.

1. On the hot "lahar" (mud flow) of the Valley of Ten Thousand Smokes, Alaska: K. Akad. Wetensch. Amsterdam, Proc. Sec. Sci., vol. 24, pp. 282-293, 3 figs., March, 1922.

Eskola, Pentti.

1. On contact phenomena between gneiss and limestone in western Massachusetts: Jour. Geology, vol. 30, no. 4, pp. 265-294, 3 figs., May-June, 1922.

Estabrook, Edward L.

1. Faulting in Wyoming oil fields: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 2, pp. 95-102, 1 fig., March-April, 1923.
2. Occurrences of oil and gas in Wyoming: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 4, p. 515, July-August, 1924.
3. Analyses of Wyoming oil field waters: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 235-246, 3 figs., March-April, 1925.
4. (and Rader, Clarence M.). History of production of Salt Creek oil field, Wyoming: Am. Inst. Min. and Met. Eng., Trans. [preprint], no. 1503, 51 pp., 8 figs., September, 1925; (with discussion), [preprint], no. 1570 (Petroleum development and technology in 1925), pp. 199-254, 8 figs., April, 1926.

Estlin, E. S.

1. Natural gas in Ontario: Canadian Inst. Min. and Met., Monthly Bull. no. 105, pp. 57-62, January, 1921; Trans., vol. 24, pp. 81-85 [1922].
2. Natural gas in 1920 [in Ontario]; Oil field operations, 1920: Ontario Dept. Mines, 30th Ann. Rept., vol. 30, pt. 5, 62 pp., illus., 1922.

Etherington, Thomas J.

1. Tertiary rocks of part of Chehalis Valley, Washington (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 314, May, 1928.

Ettlinger, I. A. See also Short, 1.

1. Ore deposits support hypothesis of a central Arizona batholith: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 63, 23 pp., 6 figs. (incl. map), February, 1928; abstract, Mining and Metallurgy, vol. 9, no. 254, p. 77, February, 1928.

Evans, C. S. See also Walker, 3.

1. Placer gold and lead-zinc deposits, Dogtooth Range, Kootenay district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1926, pt. A, pp. 52-55, 1927.

Evans, George Watkin.

1. Preliminary report on the Horseshoe district of the Teton coal basin, southeastern Idaho: U. S. Bur. Mines, Bull., 166, pp. 90-103, 1 pl. (map), 3 figs., 1919.
2. Alaskan coal fields: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1047, 10 pp., February, 1921; vol. 66, pp. 286-298, 1922. Abstract, Mining and Metallurgy, no. 170, pp. 34-35, February, 1921.
3. Coal mining in the State of Washington during 1923: Washington, Division of Geology, Bull. no. 30, pp. 184-215, 1924.
4. Report on the Horseshoe Basin area of the Teton coal field in southeastern Idaho: Idaho, Bur. Mines and Geology, Pam. no. 10, 15 pp., April, 1924. [Mimeographed.]

Evans, Isabel P. See also Merrill, 45; Ransome, 8, 14; Ross, C. P., 4.

1. Bibliography of quicksilver in North America: U. S. Geol. Survey, Mineral Resources, 1917, pt. 1, pp. 425-455, March 18, 1919.
2. Recent publications on quicksilver in North America: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 179-182, October 31, 1919; 1919, pt. 1, pp. 177-180, April 5, 1921; 1920, pt. 1, pp. 437-439, March 27, 1922; 1921, pt. 1, pp. 117-120, August 7, 1922; 1922, pt. 1, pp. 121-124, September 18, 1923.

Evans, John R. C.

1. The Richmond fauna of northeastern Illinois (abstract): Chicago, Univ., Abstracts of Theses, Sci. Ser., vol. 2, pp. 199-205, September, 1926.

Evans, John William.

1. Isostasy and geological structure (abstract): Pan-American Geologist, vol. 44, no. 4, pp. 329-330, November, 1925.
2. Continental drift (abstract): Pan-Am. Geologist, vol. 44, no. 4, pp. 332-333, November, 1925.

Evans, Noel.

1. Stratigraphy of Weatherford area, Oklahoma (with discussion by Henry F. Schweer): Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 7, pp. 705-714, 2 figs., July, 1928.

Evans, Oren F.

1. Some observations on erosion and transportation in the Wichita Mountain area: Oklahoma Acad. Sci., Proc., vol. 2 (Oklahoma, Univ., Bull., new ser. no. 247), pp. 77-79, October 1, 1922.
2. A study of some conglomerates near the eastern limits of the red beds of Oklahoma: Oklahoma Acad. Sci., Proc., vol. 3 (Oklahoma, Univ., Bull., new ser. no. 271), pp. 94-95, October 1, 1923.
3. Some observations on the South Canadian River near Norman: Oklahoma Acad. Sci., Proc., vol. 3 (Oklahoma, Univ., Bull., new ser. no. 271), pp. 120-123, October 1, 1923.
4. Some processes in the formation of the stream valleys of the interior plains region of the United States (abstract): Oklahoma Acad. Sci., Proc., vol. 5, 1925 (Oklahoma, Univ., Bull., new ser. no. 330, Univ. Studies no. 22), p. 150, April 1, 1926.
5. A stream valley type of Oklahoma: Oklahoma Acad. Sci., Proc., vol. 6, pt. 2, 1926 (Oklahoma, Univ., Bull., new ser. no. 348), pp. 229-231, January 1, 1927.
6. Origin of certain stream valleys of the interior plains regions of the United States: Am. Jour. Sci., 5th ser., vol. 13, pp. 257-259, March, 1927.
7. Preliminary report on road materials of western Oklahoma: Oklahoma Geol. Survey, Circular no. 17, 19 pp., 1 fig., 1 pl. (map), August, 1928.
8. Physiography in relation to past climates: Oklahoma Acad. Sci., Proc., vol. 7 (Oklahoma, Univ., Bull., new ser., no. 409), pp. 149-151 [1928].
9. Some reasons for the parallel courses of streams in Oklahoma: Oklahoma Acad. Sci., Proc., vol. 7 (Oklahoma, Univ., Bull., new ser., no. 409), pp. 152-154 [1928].

Eve, A. S.

1. (and Keyes, D. A.). Geophysical methods of prospecting: U. S., Bur. Mines Tech. Paper 420, 26 pp., 27 figs., 1927; Min. Rev., Salt Lake City, Utah, vol. 29, no. 22, pp. 7-15, 18, February 29, 1928.

Everit, R. S.

1. Hot spring water from Clifton, Arizona: *Econ. Geology*, vol. 20, no. 3, pp. 291-292, May, 1925.

Eyl, W. C. See also Kentucky G. S., 23, 36, 41.

1. (and Hudnall, J. S.). Map of the areal and structural geology of Jackson County, Kentucky: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
2. Map of the areal and structural geology of Lee County, Kentucky: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.

Faessler, Carl. See Dresser, 4.

Fairbanks, Ernest E.

1. Notes on mineragraphic technique: *Econ. Geology*, vol. 19, no. 2, pp. 213-214, March, 1924.
2. The identification of manganese minerals: *Econ. Geology*, vol. 19, no. 8, pp. 769-770, December, 1924.
3. Angular inclusions and replacement deposits: *Econ. Geology*, vol. 20, no. 3, pp. 293-295, May, 1925.
4. A modification of Lemberg's staining method: *Am. Mineralogist*, vol. 10, no. 5, pp. 126-127, May, 1925.
5. The form of replacement crystals: *Am. Mineralogist*, vol. 10, no. 7, pp. 163-166, July, 1925.
6. The mechanism of replacement and recrystallization: *Econ. Geology*, vol. 20, no. 5, pp. 470-484, 1 fig., August, 1925.
7. Dumortierite from Nevada: *Am. Mineralogist*, vol. 11, no. 4, pp. 93-96, April, p. 135, May, 1926.
8. Electrical conductivity of ore minerals (discussion): *Econ. Geology*, vol. 21, no. 4, pp. 399-401, June-July, 1926.
9. Zeophyllite from Idaho, with note on the determination of Mallard's constant: *Am. Mineralogist*, vol. 11, no. 9, pp. 249-252, September, 1926.
10. A geological reconnaissance of the Dracut norite stock of Massachusetts: *Boston Soc. Nat. Hist., Proc.*, vol. 38, no. 8, pp. 397-412, 1 fig., September, 1927.
11. The importance of pollucite: *Am. Mineralogist*, vol. 13, no. 1, pp. 21-25, January, 1928.
12. (editor). The laboratory investigation of ores; a symposium. ix, 262 pp., New York, McGraw-Hill Book Company, 1928.

Includes the following papers:

Lindgren, Waldemar. Historical review of the study of polished sections of opaque minerals, pp. 1-6.

Fairbanks, Ernest E. Microscopes, their construction and use, pp. 7-34.

Davey, Wheeler P. Crystal analysis by means of X ray, pp. 35-85.

Loveland, R. P. and Trivelli, A. P. H. Practical photomicrography, pp. 86-102.

Fairbanks, Ernest E. Dielectric methods, pp. 103-111.

Lane, Alfred C. Genetic significance of grain, pp. 112-131.

Colony, R. J. Ore-mineral sequence, pp. 132-146.

Newhouse, W. H. The microscopic criteria of replacement in the opaque ore minerals, pp. 147-161.

Thiel, G. A. The textural relationships of the opaque manganese minerals, pp. 162-171.

Bowen, N. L. Geologic thermometry, pp. 172-199.

Guild, F. N. The enrichment of silver ores, 200-239.

Fairbanks, Ernest E. Zonal distribution, pp. 240-242.

Schwartz, G. M. Ore-dressing microscopy, pp. 243-255.

Fairchild, Herman Leroy. See also Diller, 5; Stoller, 1.

1. Pleistocene marine submergence of the Hudson, Champlain, and St. Lawrence valleys: New York State Mus., Bull., nos. 209, 210, 76 pp., 25 pls. (incl. maps), 1919.
2. Postglacial sea-level waters in eastern Vermont: Vermont, State Geologist, 11th Rept., pp. 52-75, 1 pl., 2 figs. [1919].
3. Henry Augustus Ward: Rochester Acad. Sci., Proc., vol. 5, pp. 241-251, portr., May, 1919.
4. Grove Karl Gilbert: Rochester Acad. Sci., Proc., vol. 5, pp. 251-259, portr., May, 1919.
5. Edwin Eugene Howell: Rochester Acad. Sci., Proc., vol. 5, pp. 259-261, May, 1919.
6. The Rochester Canyon and the Genesee River base-levels: Rochester Acad. Sci., Proc., vol. 6, pp. 1-55, 14 pls., 13 figs., October, 1919.
7. Postglacial uplift of southern New England: Geo. Soc. America, Bull., vol. 30, no. 4, pp. 597-636, 3 figs., December 31, 1919; abstract, no. 1, pp. 89-90, March 31, 1919.
8. Musical sands: Science, new ser., vol. 51, pp. 62-64, January 16, 1920.
9. A nature drama [Pleistocene, New York State]: Sci. Monthly, vol. 10, no. 4, pp. 405-417, 13 figs., April, 1920.
10. The latest glacial features in the United States (abstract): Science, new ser., vol. 51, p. 493, May 14, 1920.
11. Pleistocene clays as a chronometer: Science, new ser., vol. 52, pp. 284-286, September 24, 1920.
12. [Review of] Text-book of geology, by Amadeus W. Grabau: Science, new ser., vol. 54, pp. 494-497, November 18, 1921. [Includes notes on American textbooks of geology.]
13. The Pinnacle Hills or the Rochester kame moraine: Rochester Acad. Sci., Proc., vol. 6, no. 5, pp. 141-194, 5 figs., 54 pls., November, 1923.
14. The development of geologic science: Sci. Monthly, vol. 19, no. 1, pp. 77-101, July, 1924.
15. Geologic history of the Genesee country. *In* History of the Genesee country (western New York), edited by Lockwood R. Doty, vol. 1, pp. 15-110, 37 pls., Chicago, The S. J. Clarke Publishing Company, 1925. Another edition with title, Geology of western New York, 62 pp., 37 pls., Published by the author, Rochester, New York, November, 1925.
16. The Susquehanna River in New York and evolution of western New York drainage: New York State Mus. Bull., no. 256, 99 pp., 10 figs., 39 pls., 1925.
17. Changing levels of the Great Lakes: Sci. Monthly, vol. 22, no. 3, pp. 193-199, March, 1926.
18. Pleistocene features of southern New England: Science, new ser., vol. 63, pp. 260-262, March 5, 1926.
19. The Mendon kame area: Rochester Acad. Sci., Proc., vol. 6, no. 6, pp. 195-215, 8 figs., 4 pls., August, 1926.
20. Geologic romance of the Finger Lakes: Sci. Monthly, vol. 23, no. 2, pp. 161-173, 10 figs., August, 1926; Smithsonian Inst., Ann. Rept., 1927, pp. 289-298, 4 figs., 6 pls., 1928.
21. The Dansville Valley and drainage history of western New York: Rochester Acad. Sci., Proc., vol. 6 no. 7, pp. 217-242, 9 figs., 8 pls., October, 1926.
22. Our world in the making: Science, new ser., vol. 64, pp. 365-371, October 15, 1926.

Fairchild, Herman Leroy—Continued.

23. Memoir of Israel C. White: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 126-145, portr., March 30, 1928.
24. Geologic story of the Genesee Valley and western New York. 215 pp., 193 pp., illus., Rochester, N. Y., published by the author, 1928.
25. Thomas Chrowder Chamberlin—teacher, administrator, geologist, philosopher: Science, new ser., vol. 68, pp. 610-612, December 21, 1928.

Fairchild, J. G. See also Miser, 2.

1. Notes on the analysis of mineral sulphide water: Washington Acad. Sci., Jour., vol. 10, no. 20, pp. 559-565, December 4, 1920.

Fansett, George Richard.

1. Field tests for the common metals; 3d ed., revised: Arizona, Bur. Mines, Bull. no. 105 (Min. Tech. Ser. no. 23), 29 pp., 1920.

Faribault, Eugene Rodolphe. See also McKenzie, N.

1. Investigations in western Nova Scotia: Canada, Geol. Survey, Summ. Rept., 1917, pt. F, pp. 17-20, 1918.
2. Investigations in western Nova Scotia: Canada, Geol. Survey, Summ. Rept., 1918, pt. F, pp. 1-4, 1919.
3. Investigations in southwestern Nova Scotia: Canada, Geol. Survey, Summ. Rept., 1919, pt. F, pp. 2-20, 4 maps, 1920.
4. Geological mapping of Berwick and Lakeview map areas, Kings and Annapolis counties, Nova Scotia: Canada, Geol. Survey, Summ. Rept., 1920, pt. E, pp. 6-16, 1921.

Farnham, C. Mason. See Davy, 1.

Farnsworth, H. R.

1. The sedimentation of the Sunset oil field and the extension of the Thirty-five anticline [Kern County, California]: Oil Bull., vol. 13, no. 11, pp. 1133-1139, 6 figs., November, 1927.
2. Geological features of Sunset field [Kern County, California]: Oil and Gas Jour., vol. 26, no. 47, pp. 72, 88, 90, 94, 96, 99, 100, 6 figs., April 12, 1928.

Farnsworth, Marie. See Bowles, 4.

Farnum, Dwight.

1. Carnotite in the Gateway district of Colorado and Utah: Min. and Sci. Press, vol. 119, pp. 127-128, 1 fig., July 26, 1919.

Farrington, Oliver Cummings.

1. Etching iron meteorites: Am. Mineralogist, vol. 5, no. 3, pp. 57-59, March, 1920.
2. Agate, physical properties and origin: Field Mus. Nat. Hist., Dept. Geology, Leaflet no. 8, pp. 1-19, 1 fig., 10 pls., 1927.

Fath, Arthur Earl. See also Redwood, 1.

1. The origin of the faults, anticlines, and buried "granite ridge" of the northern part of the Mid-Continent oil and gas field: U. S. Geol. Survey, Prof. Paper 128, pp. 75-84, 3 pls., 3 figs., August 13, 1920; (abstract by M. I. Goldman), Washington Acad. Sci., Jour., vol. 11, no. 10, pp. 236-237, May 19, 1921.
2. Geology of the Eldorado oil and gas field, Butler County, Kansas; Kansas, State Geol. Survey, Bull. 7, 187 pp., 9 figs., 19 pls. (incl. maps) [1921].

Fath, Arthur Earl—Continued.

3. The age of the domes and anticlines in the Lost Soldier-Ferris district, Wyoming: *Jour. Geology*, vol. 30, no. 4, pp. 303-310, 1 pl. (map), May-June, 1922.
4. Is the Stapleton pay of the El Dorado field, Butler County, Kansas, Ordovician or Mississippian in age?: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 4, pp. 374-376, July-August, 1922.
5. (and Moulton, G. F.). Oil and gas fields of the Lost Soldier-Ferris district, Wyoming: *U. S. Geol. Survey, Bull.* 756, 57 pp., 2 figs., 8 pls. (incl. map), 1924.
6. Geology of the Bristow quadrangle, Creek County, Oklahoma, with reference to petroleum and natural gas: *U. S. Geol. Survey, Bull.* 759, 63 pp., 3 figs., 13 pls. (incl. maps), 1925.

Fay, Albert Hill.

1. A glossary of the mining and mineral industry: *U. S. Bur. Mines, Bull.* 95, 754 pp., 1920.
2. The Illinois-Kentucky fluorspar industry: *Eng. and Min. Jour.*, vol. 122, no. 5, pp. 165-169, 10 figs., July 31, 1926.

Fearing, Frederick C.

1. Alaska tin deposits: *Eng. and Min. Jour.*, vol. 110, no. 4, pp. 154-158, 3 figs., July 24, 1920.
2. Manganese deposits of Lunenburg County, Nova Scotia: *Eng. and Min. Jour.-Press*, vol. 115, no. 1, pp. 11-15, 8 figs., January 6, 1923; no. 11, pp. 482-483, March 17, 1923; no. 23, pp. 1008-1009, June 9, 1923.

Fearing, J. L., jr.

1. (and Benedict, P. C.). Geology of the Verde Central mine [Jerome district, Arizona]: *Eng. and Min. Jour.-Press*, vol. 119, no. 15, pp. 609-611, 4 figs., April 11, 1925.
2. Some notes on the geology of the Jerome district, Arizona: *Econ. Geology*, vol. 21, no. 8, pp. 757-773, 5 figs., December, 1926.

Feilding, Rowland C.

1. Notes on the geology and ore occurrences of the Porcupine gold field [Ontario]: *Inst. Min. and Met., Bull.* no. 231, 10 pp., December, 1923; no. 232 (discussion), pp. 9-20, January, 1924; discussion by H. H. Knox, *Min. Mag.*, vol. 30, no. 2, pp. 120-122, 2 figs., February, 1924. Extracts, *Canadian Min. Jour.*, vol. 45, no. 3, pp. 75-76, January 18, 1924, no. 16, pp. 372-373, April 18, 1924.

Feiss, J. W.

1. Casting invertebrate fossils in sealing wax and type metal (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 235, March 30, 1926.

Feliciano, José María.

1. The relation of concretions to coal seams: *Jour. Geology*, vol. 32, no. 3, pp. 230-239, April-May, 1924; abstract, *Chicago, Univ., Abstracts of Theses, Sci. Ser.*, vol. 2, pp. 207-216, September, 1926.

Fellman, Carl M.

1. The mining of fluorspar and its uses: *Lake Superior Min. Inst., Proc.*, vol. 25, pp. 197-211, 8 figs., 1926.

Fenneman, Nevin Melanchthon.

1. Functions of the division of geology and geography of the National Research Council: *Science*, new ser., vol. 56, pp. 620-624, December 1, 1922.
2. Physiographic provinces and sections in western Oklahoma and adjacent parts of Texas: *U. S. Geol. Survey, Bull.* 730, pp. 115-134, 2 figs., 3 pls., December 20, 1922.
3. Recent work in paleobotany: *Science*, new ser., vol. 57, pp. 44-45, January 12, 1923.
4. A classification of natural resources: *Science*, new ser., vol. 61, pp. 191-197, February 20, 1925.
5. Resource survey of the Commercial Club of Cincinnati; abstract of results: *Cincinnati, Univ., Inst. Sci. Research*, ser. 2, no. 1, 86 pp., 14 figs., June, 1927.
6. Physiographic divisions of the United States; third edition, revised and enlarged: *Assoc. Am. Geographers, Annals*, vol. 18, no. 4, pp. 261-353, map, December, 1928.

Fenner, Clarence Norman.

1. Geology of the Katmai region, Alaska, and the great eruption of 1912 (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 140, March 31, 1920.
2. The Katmai region, Alaska, and the great eruption of 1912: *Jour. Geology*, vol. 28, no. 7, pp. 569-606, 17 figs., October-November, 1920.
3. The Katmai region, Alaska, and the great eruption of 1912 (*Jour. Geology*, vol. 28, pp. 569-606, 1920) (abstract): *Washington Acad. Sci., Jour.*, vol. 11, no. 16, p. 394, October 4, 1921.
4. Evidences of assimilation during the Katmai eruption of 1912 (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 129, March 31, 1922.
5. The origin and mode of emplacement of the great tuff deposit in the Valley of Ten Thousand Smokes: *Nat. Geog. Soc., Contributed Technical Papers*, Katmai series, no. 1, 74 pp., illus., 1923; abstract, *Science*, new ser., vol. 57, pp. 446-447, April 13, 1923.
6. Moving pictures of the Valley of Ten Thousand Smokes, Alaska (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, p. 112, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 156, March, 1924.
7. Earth movements accompanying the Katmai eruption: *Jour. Geology*, vol. 33, no. 2, pp. 116-139, February-March, no. 3, pp. 193-233, 18 figs., April-May, 1925.
8. The Katmai magmatic province: *Jour. Geology*, vol. 35, no. 7, pt. 2, pp. 673-772, 15 figs., October-November, 1926.
9. An unusual occurrence of albite [Paterson, New Jersey]: *Am. Mineralogist*, vol. 11, no. 10, pp. 255-259, 1 fig., October, 1926.
10. Magmatic problems of the Aleutians: *Nat. Research Council, Bull.* no. 56 (vol. 11, pt. 2), pp. 124-127, November, 1926.
11. The analytical determination of uranium, thorium, and lead as a basis for age calculations: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 369-381, November, 1928.

Fenton, Carroll Lane. See also Fenton, Mildred Adams, 3.

1. Some new brachiopods and gastropods from the Devonian of Iowa: *Am. Midland Naturalist*, vol. 5, no. 11, pp. 213-224, 2 pls., September, 1918.

Fenton, Carroll Lane—Continued.

2. The Hackberry stage of the upper Devonian of Iowa: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 355-376, 5 figs. (incl. map), November, 1919.
3. The Hackberry stage of the upper Devonian: *Am. Midland Naturalist*, vol. 6, no. 9, pp. 179-200, 1 pl., 1 fig., May, 1920.
4. (and Fenton, Mildred Adams). The stratigraphy and fauna of the Hackberry stage of the Upper Devonian: *Michigan, Univ., Contr., Mus. Geology*, vol. 1, 260 pp., 9 figs., map, 45 pls., 1924.
5. (and Fenton, Mildred Adams). Some Black River brachiopods from the Mississippi Valley: *Iowa Acad. Sci., Proc.* 1922, vol. 29, pp. 67-77, 2 pls. [1924?].
6. (and Fenton, Mildred Adams). Ecologic interpretations of some biostratigraphic terms: *Am. Midland Naturalist*, Notre Dame, Indiana, vol. 11, no. 1, pp. 1-23, January, 1928.
7. Apparent orthogenesis in the genus *Spirifer* (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, p. 171, 1928; *Ohio Jour. Sci.*, vol. 28, no. 3, p. 149, May, 1928.
8. The stratigraphy and larger fossils of the Plattin formation in Ste. Genevieve County, Missouri: *Am. Midland Naturalist*, Notre Dame, Indiana, vol. 11, no. 2, pp. 86-96, March, nos. 3, 4, pp. 125-143, 7 pls., May-July, 1928.
9. Forms of *Strophomena* from Black River and Richmond formations: *Am. Midland Naturalist*, vol. 11, nos. 3, 4, pp. 144-159, 3 pls., May-July, 1928.
10. The *Spirifer orestes* phylum; its evolution and ecology (abstract): *Chicago, Univ., Abstracts of Theses, Sci. Ser.*, vol. 4, pp. 223-226, May, 1928.

Fenton, Mildred Adams. See also Fenton, Carroll Lane, 4, 6.

1. New species of *Aulopora* from the Devonian of Iowa: *Am. Midland Naturalist*, Notre Dame, Indiana, vol. 10, nos. 11-12, pp. 373-384, 2 pls., September-November, 1927.
2. The nature and relationships of the genus *Aulopora* (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, p. 172, 1928; *Ohio Jour. Sci.*, vol. 28, no. 3, p. 150, May, 1928.
3. (and Fenton, Carroll Lane). A new species of *Schizophoria* from the Devonian of Iowa: *Am. Midland Naturalist*, vol. 11, nos. 3, 4, pp. 160-161, 1 pl., May-July, 1928.

Ferguson, Henry Gardiner. See also Scott, D. B., 1.

1. Graphite in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 2, pp. 223-265, 4 figs., 1 pl., October, 1919.
2. The limestone ores of Manhattan, Nevada: *Econ. Geology*, vol. 16, no. 1, pp. 1-36, 6 figs. (incl. maps), January, 1921.
3. The Mogollon district, New Mexico: *U. S. Geol. Survey, Bull.* 715, pp. 171-204, 2 figs., 6 pls. (incl. maps), February 8, 1921. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 11, no. 15, pp. 375-376, September 19, 1921.
4. The Round Mountain district, Nevada: *U. S. Geol. Survey, Bull.* 725, pp. 383-406, 6 figs., November 21, 1921.
5. Geology and ore deposits of the Manhattan district, Nevada: *U. S. Geol. Survey, Bull.* 723, 163 pp., 15 figs., 18 pls. (incl. maps), 1924.
6. (and Cathcart, S. H.). Major structural features of some western Nevada ranges (abstract): *Washington Acad. Sci., Jour.*, vol. 14, no. 15, pp. 376-379, September 19, 1924.

Ferguson, Henry Gardiner—Continued.

7. Late Tertiary and Pleistocene faulting in western Nevada (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 164, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, pp. 163-164, March, 1926.
8. Geology and ore deposits of the Mogollon mining district, New Mexico: U. S. Geol. Survey, Bull. 787, 100 pp., 5 figs., 25 pls. (incl. maps), 1927.
9. Regional relations of Nevada ore deposits (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, pp. 121-122, March 4, 1927.
10. The Gilbert district, Nevada: U. S. Geol. Survey, Bull. 795, pp. 125-145, 2 figs. (maps), November 4, 1927.

Ferguson, Jim G.

1. Outlines of the geology, soils, and minerals of the State of Arkansas [cover title, Outlines of Arkansas geology]. 192 pp., illus., published by the [Arkansas] State Bureau of Mines, Manufactures and Agriculture, Little Rock, 1920.
2. Minerals in Arkansas. 160 pp., illus., Little Rock, Ark., 1922.

Ferguson, John Bright.

1. (and Merwin, H. E.). The ternary system CaO-MgO-SiO_2 : Am. Jour. Sci., 4th ser., vol. 48, pp. 81-123, 17 figs., August, 1919.
2. (and Merwin, H. E.). Wollastonite (CaO-SiO_2) and related solid solutions in the ternary system lime-magnesia-silica: Am. Jour. Sci., 4th ser., vol. 48, pp. 165-189, 8 figs., September, 1919.
3. The oxidation of lava by steam: Washington Acad. Sci., Jour., vol. 9, no. 18, pp. 539-546, November 4, 1919.
4. (and Buddington, A. F.). The binary system åkermanite-gehlenite: Am. Jour. Sci., 4th ser., vol. 50, pp. 131-140, 4 figs., August, 1920.

Ferguson, R. N.

1. The oil and gas prospects in the vicinity of Buttonwillow, Kern County, California: California State Min. Bur., Summary of Operations California Oil Fields, Monthly Chapter, Seventh Ann. Rept. State Oil and Gas Supervisor, vol. 7, no. 3, pp. 7-13, 1 fig., September, 1921. Abstract by K. C. Heald, Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 1, pp. 57-58, January-February, 1922.
2. (and Willis, C. G.). Dynamics of oil-field structure in southern California: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 5, pp. 576-583, 2 figs., September-October, 1924.

Fermor, L. L.

1. The pitch of rock folds: Econ. Geology, vol. 19, no. 6, pp. 559-562, September-October, 1924.

Fernández Peralta, Ricardo. See Tristán, 2.

Ferrier, Walter Frederick.

1. (assisted by Ferrier, Dorothy J.). Annotated catalogue of and guide to the publications of the Geological Survey, Canada, 1845-1917. 544 pp., Canada, Geol. Survey, 1920.
2. (and Graham, R. P. D.). Pseudomorphs of corundum after spinel from Bathurst Township, Lanark County, Ontario; with a note on the identification of the original locality of the spinel: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 22, sec. 4, pp. 31-38, 2 pls. March, 1928.

Fettke, Charles Reinhard. See also Ashley, 9; Pennsylvania Geol. Survey.

1. Glass manufacture and the glass sand industry of Pennsylvania: Pennsylvania Topog. and Geol. Survey, Rept. no. 12, 278 pp., 108 pls., 1918 [1919 on cover-title].
2. (and Hubbard, Bela). Limonite deposits of Mayaguez Mesa, Porto Rico: Am. Inst. Min. and Met. Eng., Trans., vol. 61, pp. 97-112, 8 figs., 1920.
3. Oil resources in coal and carbonaceous shales of Pennsylvania: Pennsylvania Geol. Survey, 4th ser., 119 pp., 16 figs., 6 pls., 1923.
4. Cannel coal and carbonaceous shale deposits of Pennsylvania (with discussion): Am. Inst. Min. and Met. Eng., Trans., vol. 69, pp. 1167-1181, 7 figs., 1923 [preprint], no. 1233, 15 pp., 7 figs., February, 1923; abstract, Mining and Metallurgy, vol. 4, no. 194, p. 93, February, 1923.
5. The geology of the Humacao district, Porto Rico: New York Acad. Sci., Scientific Survey of Porto Rico and the Virgin Islands, vol. 2, pt. 2, pp. 117-197, 53 figs., map, 1924.
6. Magnetite deposits of eastern Porto Rico (with discussion by S. Harbert Hamilton and A. K. Knickerbocker): Am. Inst. Min. and Met. Eng., Trans., vol. 70, pp. 1024-1042, 6 figs., 1924 [preprint], no. 1294, 15 pp., 6 figs., February, 1924; abstract, Mining and Metallurgy, vol. 5, no. 208, pp. 195-196, April, 1924.
7. (and Hill, E. G.). Vanport limestone of Butler and southern Venango counties: Pennsylvania Geol. Survey, 4th ser., Bull. M7, pp. 282-292, 1925.
8. Note on a calcified log from the Pittsburgh coal near Morgantown, West Virginia: Am. Mineralogist, vol. 10, no. 5, pp. 109-112, 3 figs., May, 1925.
9. Preliminary note on a calcified log from the Pittsburgh coal near Morgantown, West Virginia: Pennsylvania Acad. Sci. Proc., vol. 1, pp. 66-68, 2 pls., 1926.

Fiedler, Albert G.

1. Report on investigations of the Roswell artesian basin, Chaves and Eddy counties, New Mexico: New Mexico, State Engineer, 7th Bienn. Rept., pp. 21-60, 10 pls. [1926].
2. (and Nye, S. Spencer). Ground-water investigation of the Roswell artesian basin, New Mexico: New Mexico, State Eng., 8th Bienn. Rept., pp. 81-107, 5 pls. (incl. maps) [1928].
3. Report on a reconnaissance of the ground-water area of the Mimbres Valley, Luna County, New Mexico: New Mexico, State Eng., 8th Bienn. Rept., pp. 159-171 [1928].

Field, John. See Becking, 1.

Field, Richard Montgomery. See also Bailey, E. B., 2.

1. The middle Ordovician of central and south central Pennsylvania: Am. Jour. Sci., 4th ser., vol. 48, pp. 403-428, 3 figs., December, 1919.
2. Origin of the "beach rock" (coquina) at Loggerhead Key, Tortugas (abstract): Geol. Sci. America, Bull., vol. 31, no. 1, p. 215, March 31, 1920.
3. The use of the term fossil: Science, new ser., vol. 51, pp. 634-635, June 25, 1920.
4. Further remarks on "the use of the term fossil": Science, new ser., vol. 53 pp. 117-118, February 4, 1921.

Field, Richard Montgomery—Continued.

5. A natural classification of sedimentary rocks (abstract): *Science*, new ser., vol. 56, pp. 174-175, August 11, 1922.
6. *Geology manual, an instruction and laboratory manual for beginners; Part I, Physical geology.* 149 pp., 18 pls., Princeton, Princeton University Press, 1927.
7. Summer school of geology and natural resources: *Science*, new ser., vol. 65, pp. 229-231, March 4, 1927.
8. Suggestions as to the study of marine sediments: *Canadian Field Nat.*, vol. 42, no. 5, pp. 119-121, 1 fig., May, 1928.
9. The great Bahama Bank; studies in marine carbonate sediments: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 239-246, 1 fig., September, 1928.

Field, V. W.

1. A Utah feldspar locality: *Am. Mineralogist*, vol. 6, no. 6, pp. 103-104, June, 1921.

Fieldner, Arno Carl.

1. (and others). Analyses of Ohio coals: U. S., Bur. Mines, Tech. Paper 344, 40 pp., 1923.
2. (and others). Analyses of mine samples [of Pennsylvania coals]: *Pennsylvania Geol. Survey*, 4th ser., Bull. M6, pt. 4, pp. 13-256, 1925.
3. (and others). Analyses of Alabama coals: U. S., Bur. Mines, Tech. Paper 347, pp. 12-107, 1925.
4. (and others). Analyses of mine samples [of coals in Utah]: U. S., Bur. Mines, Tech. Paper 345, pp. 23-85, 1925.
5. (and others). Analyses of mine samples [of Tennessee coals]: U. S., Bur. Mines, Tech. Paper 356, 94 pp., 1926.
6. (and others). Analyses of Virginia coals: U. S., Bur. Mines, Tech. Paper 365, pp. 8-69, 1926.
7. (and others). Analyses of Missouri coals: U. S., Bur. Mines., Tech. Paper 366, pp. 8-37, 1926.
8. (and others). Analyses of West Virginia coals: U. S., Bur. Mines, Tech. Paper 405, 343 pp., 1928.
9. (and others). Analyses of Oklahoma coals: U. S., Bur. Mines, Tech. Paper 411, 62 pp., 1928.
10. (and others). Analyses of Arkansas coals: U. S., Bur. Mines, Tech. Paper 416, 26 pp., 1928.

Figgins, J. D.

1. The antiquity of man in America: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 27, no. 3, pp. 229-239, 8 figs., May-June, 1927.

Fillman, Louise.

1. Classification of lenses (abstract): *Iowa Acad. Sci., Proc.*, 1922, vol. 29, p. 128 [1924?].
2. Origin of limestone conglomerates (abstract): *Iowa Acad. Sci., Proc.* 1922, vol. 29, p. 128 [1924?].
3. Cenozoic history of the northern Black Hills of South Dakota (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 172, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, pp. 167-168, March, 1926.

Filmer, Edwin Alfred.

1. An accurate method of taking readings on exceedingly low rock dips: *Science*, new ser., vol. 68, p. 459, November 9, 1928.

Finch, E. H. See Condit, 5.

Finch, John Wellington.

1. Platinum discoveries in Wyoming [Encampment district]: Eng. and Min. Jour.-Press, vol. 120, no. 3, pp. 95-96, 1 fig., July 18, 1925.
2. Sedimentary metalliferous deposits of the red beds: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 51, 7 pp., February, 1928; Trans., vol. 76, pp. 378-392, 1928; abstract, Mining and Metallurgy, vol. 9, no. 254, p. 84, February, 1928.

Finch, Ruy Herbert. See also Jaggar, 9.

1. [Observations on Halemaumau]: Hawaiian Volcano Observatory, Monthly Bull., vol. 8, nos. 3-5, pls., 1920.
2. On the prediction of tidal waves: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2, pp. 1366-1368 [1924].
3. Seismic sequences of the explosive eruption of Kilauea in May, 1924: Seismol. Soc. America, Bull., vol. 14, no. 4, pp. 217-222, 1 fig., 3 pls., December, 1924.
4. An earthquake prediction at Hawaiian Volcano Observatory: Science, new ser., vol. 61, pp. 42-43, January 9, 1925.
5. The earthquakes at Kapoho, Island of Hawaii, April, 1924: Seismological Soc. America, Bull., vol. 15, no. 2, pp. 122-127, 2 figs., June, 1925.
6. (and Emerson, O. H.). Sulphate deposits in lava tubes: Am. Jour. Sci., 5th ser., vol. 10, pp. 39-40, July, 1925.
7. Expedition to the southwest rift of Mauna Loa: Hawaiian Volcano Observatory, Monthly Bull., vol. 13, no. 12, pp. 89-91, December, 1925.
8. New York City an aseismic area: Science, new ser., vol. 64, p. 183, August 20, 1926.
9. An observatory for the study of Lassen Peak [California]: Seismological Soc. America, Bull., vol. 18, no. 1, pp. 5-8, 1 fig., 1 pl., March, 1928.

Finger, Charles J.

1. The ice age. Ten cent pocket series no. 327, edited by E. Haldeman-Julius. 63 pp., Girard, Kansas, Haldeman-Julius Company, 1922.

Finlay, James Ralph.

1. The geology and economics of coal: Eng. and Min. Jour., vol. 107, pp. 945-950, May 31, 1919.
2. The Permian revolution in North America: Eng. and Min. Jour., vol. 112, no. 27, pp. 1058-1059, December 31, 1921.
3. Report of appraisal of mining properties of New Mexico. 154 pp. [New Mexico, State Tax Commission, 1922].

Finley, F. L.

1. Kamiskotia gold area, District of Cochrane: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 6, pp. 43-64, illus., map, 1925.
2. Wasapika section, West Shiningtree gold area, District of Sudbury: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 6, pp. 83-96, 7 figs., 1927.

Fippin, Elmer O.

1. More on singing sands: Science, new ser., vol. 51, p. 64, January 16, 1920.

Fischer, Arthur Homer.

1. A summary of mining in the State of Washington: Washington, Univ., Engineering Exper. Sta. Series, Bull. no. 4, 124 pp., map, November, 1918.

Fisher, Cassius Asa. 1872-1930.

1. Salt Creek oil field, Wyoming: *Mining and Metallurgy*, vol. 6, no. 222, pp. 279-284, 5 figs., June, 1925.
2. (and Lloyd, E. Russell). The northern Cordilleran geosyncline and its relation to petroleum accumulation: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 1, pp. 19-29, 1 figs., January, 1927.

Fisher, Daniel Jerome.

1. The teaching of crystallography: *Jour. Geology*, vol. 32, no. 6, pp. 529-542, 5 figs., August-September, 1924.
2. Geology and mineral resources of the Joliet quadrangle: *Illinois State Geol. Survey, Bull. no. 51*, 160 pp., 47 figs., 6 pls. (incl. maps), 1925.
3. Structure of Herrin (No. 6) coal seam near Duquoin: *Illinois State Geol. Survey, Rept. of Investigations no. 5*, 34 pp. 15 figs., 2 pls., 1925.
4. Cretaceous rocks of the Book Cliffs in eastern Utah (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 134-135, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 78, February, 1927.
5. Notes regarding the coalification process: *Jour. Geology*, vol. 35, no. 7, pp. 639-646, 3 figs., October-November, 1927.
6. Geology of the Joliet district [Illinois]: *Illinois State Acad. Sci., Trans.*, vol. 20, pp. 30-37, 3 figs., March, 1928.

Fisher, Lloyd W.

1. (and Simons, F. L.). Applications of colloid chemistry to mineralogy; Part I, Preliminary report: *Am. Mineralogist*, vol. 11, no. 5, pp. 124-130, 4 figs., May, 1926.
2. (and Gedney, Edwin K.). Notes on the mineral localities of Rhode Island; I, Providence County: *Am. Mineralogist*, vol. 11, no. 12, pp. 334-340, December, 1926.
3. Quartz from Iowa Canyon, Nevada: *Am. Mineralogist*, vol. 12, no. 5, pp. 225-226, 2 figs., May, 1927.
4. (and Doll, Charles G.). Notes on the mineral localities of Rhode Island; Part II, Remaining counties: *Am. Mineralogist*, vol. 12, no. 12, pp. 427-436, December, 1927.

Fisher, Norman B.

1. The Quebec asbestos industry: *Canadian Min. Jour.*, vol. 44, no. 33, pp. 649-655, 9 figs., August 17, 1923.

Fiske, L. E.

1. The relation of structure to production in five oil and gas fields of the Kentucky eastern coal field: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 5, pp. 477-492, 10 figs., May, 1927.

Fitch, A. A.

1. The origin of the zinc deposits of Franklin Furnace, New Jersey: *Min. Mag.*, vol. 39, no. 2, pp. 82-84, 2 figs., August, 1928.

Fitch, William Edward.

1. Mineral waters of the United States and American spas. 799 pp., 37 figs., Philadelphia, Lea & Febiger, 1927.

Fletcher, A. R.

1. The dynamics of the Mexican Cordillera: *Min. Jour., Arizona*, vol. 12, no. 6, pp. 7-8, 35, 1 fig., August 15, 1928.

Flint, George M.

1. Famous mineral localities; Beryl Hill, Grafton, New Hampshire: *Am. Mineralogist*, vol. 4, no. 3, pp. 21-22, 1 pl., March, 1919.

Flint, Richard Foster.

1. A brief view of Rocky Mountain structure: *Jour. Geology*, vol. 32, no. 5, pp. 410-431, 9 figs., July-August, 1924.
2. (and Ball, John R.). Revision of the Silurian of southeastern Missouri: *Jour. Geology*, vol. 34, no. 3, pp. 248-256, April-May, 1926; abstract, *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 243, March 30, 1926.
3. Thrust faults in southeastern Missouri: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 37-40, 2 figs., July, 1926.
4. The geology of parts of Perry and Cape Girardeau counties, Missouri (abstract): *Chicago, Univ., Abstracts of Theses, Sci. Ser.*, vol. 3, pp. 221-224, April, 1927.
5. Pleistocene terraces of lower Connecticut Valley (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, pp. 147-148, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 216-217, March 30, 1928.
6. Eskers and crevasse fillings: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 410-416, 3 figs., May, 1928.
7. Natural boundaries in the Interior Low Plateau physiographic province: *Jour. Geology*, vol. 36, no. 5, pp. 451-457, 2 figs., July-August, 1928.
8. Pleistocene terraces of the lower Connecticut Valley: *Geol. Soc. America, Bull.*, vol. 39, no. 4, pp. 955-984, 9 figs., December 30, 1928.

Flores, Teodoro.

1. Estudio geológico-minero de los distritos de El Oro y Tlalpujahua: México, *Inst. geol., Bol. no. 37*, 85 pp., 20 pls. (incl. maps), 1920.
2. Informes preliminares de algunas de las zonas mineras situadas al este y oeste del ferrocarril Sud-Pacífico de México en el Estado de Sonora y de las minas de grafito en el región de Moradillas del mismo estado: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 13, 20 pp., map., September, 1925.
3. Estudio geológico de la zona minera comprendida entre los minerales de Atotonilco el Chico y Zimapán, en el Estado de Hidalgo: Mexico, *Inst. geol., Bol. 43*, 159 pp., 35 pls., 1924 [1926?].
4. Informe preliminar acerca de algunas zonas mineralizadas vecinas á la vía del Sud-Pacífico de México, entre las estaciones Carbó y Santa Ana en el Estado de Sonora: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 19, September, 1926.
5. Informe preliminar acerca de la geología general y zonas mineralizadas vecinas á la vía del Ferrocarril Sud-Pacífico de México, entre las estaciones Santa Ana y Nogales, en el Estado de Sonora: Mexico, *Inst. geol., Folleto de divulgación*, no. 28, 33 pp., August, 1927.

Foerste, August Frederick. See also Miller, A. M., 1; Slocum, 1; Ulrich, 6; Twenhofel, 30.

1. Echinodermata of the Brassfield (Silurian) formation of Ohio: *Denison Univ., Sci. Lab., Bull.*, vol. 19, pp. 3-32, 7 pls., 1 fig., April, 1919.

Foerste, August Frederick—Continued.

2. Silurian fossils from Ohio, with notes on related species from other horizons: *Ohio Jour. Sci.*, vol. 19, no. 7, pp. 367-404, 2 figs., 4 pls., May, 1919.
3. Notes on *Isotelus*, *Acrolichas*, *Calymene*, and *Encrinurus*: *Denison Univ. Sci. Lab., Bull.*, vol. 19, pp. 65-82, 6 pls., September, 1919.
4. New species of brachiopod [*Rhynchotreta williamsi*, Manitoulin Island]: *Canada, Geol. Survey, Mem.* 111, p. 126, 2 figs. on pl. 7, 1919.
5. The generic relations of the American Ordovician Lichadidae: *Am. Jour. Sci.*, 4th ser., vol. 49, pp. 26-50, 2 figs., 4 pls., January, 1920.
6. Presence of upper Silurian sandstone in Essex County, northeastern Massachusetts (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 206-207, March 31, 1920.
7. Intercalation of thecal plates in *Holocystites* in connection with the criteria upon which species can be distinguished (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 207-208, March 31, 1920.
8. Method of appearance of additional arms on increasing age in *Caryocrinites* (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 220-221, March 31, 1920.
9. The Kimmswick and Plattin limestones of northeastern Missouri: *Denison Univ. Bull., Sci. Lab., Jour.*, vol. 19, pp. 175-224, 3 pls., May, 1920.
10. Racine and Cedarville cystids and blastoids, with notes on other echinoderms: *Ohio Jour. Sci.*, vol. 21, no. 2, pp. 33-78, 4 figs., 4 pls., December, 1920.
11. Notes on Arctic Ordovician and Silurian cephalopods: *Denison Univ. Bull., Scientific Laboratories, Jour.*, vol. 19, pp. 247-306, 1 fig., 9 pls., September, 1921.
12. Unattached simple Paleozoic corals (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 201, March 31, 1922.
13. The distribution of the Ottawa Trenton echinoderm faunas: *Canadian Field-Naturalist*, vol. 36, no. 5, pp. 84-86, May, 1922.
14. Notes on Medinan, Niagaran, and Chester fossils: *Denison Univ., Sci. Lab., Jour.*, vol. 20, pp. 37-120, 13 pls., June, 1923.
15. Upper Ordovician faunas of Ontario and Quebec: *Canada, Geol. Survey, Mem.* 138, 255 pp., 14 figs., 46 pls., 1924.
16. Silurian cephalopods of northern Michigan: *Michigan, Univ., Mus. Geology, Contr.*, vol. 2, no. 3, pp. 19-120, 2 figs., 17 pls., July 10, 1924.
17. Notes on American Paleozoic cephalopods: *Denison Univ., Sci. Lab., Jour.*, vol. 20, pp. 193-267, 22 pls., December, 1924.
18. Cephalopoda of Lake Timiskaming area and certain related species: *Canada, Geol. Survey, Mem.* 145, pp. 64-93, 2 figs., 7 pls., 1925.
19. Notes on cephalopod genera; chiefly coiled Silurian forms: *Denison Univ., Sci. Lab., Jour.*, vol. 21, pp. 1-69, 34 pls., March, 1925.
20. Cephalopoda from the Ordovician and Silurian of Great Slave Lake: *Canada, Geol. Survey, Bull.*, no. 44, pp. 65-72, 1 pl., 1926.
21. Actinosiphonate, trochoceroid, and other cephalopods: *Denison Univ. Bull.*, vol. 26, no. 6, *Sci. Lab. Jour.*, vol. 21, pp. 285-383, 22 pls., September, 1926.
22. Ordovician and Silurian cephalopods of the Hudson Bay area: *Denison Univ. Bull.*, vol. 27, no. 3, *Sci. Lab., Jour.*, vol. 22, pp. 1-107, 1 fig., 24 pls., March, 1927.
23. Devonian cephalopods from Alpena in Michigan: *Michigan, Univ., Mus. Geology, Contr.*, vol. 2, no. 9, pp. 189-208, 5 pls., August 3, 1927.

Foerste, August Frederick—Continued.

24. American Arctic and related cephalopods: Denison Univ. Bull., vol. 28, no. 2, Sci. Lab., Jour., vol. 23, pp. 1-110, 29 pls., January, 1928.
25. Memorial of Charles Joseph Norwood: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 40-47, portr., March 30, 1928.
26. Some hitherto unfigured Ordovician cephalopods from Anticosti Island: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 22, sec. 4, pp. 223-234, 11 pls., May, 1928.
27. New Devonian Cephalopoda from Nova Scotia: Canada, Geol. Survey, Bull. no. 49, pp. 9-13, 1 fig., 1928.
28. A restudy of some of the Ordovician and Silurian cephalopods described by Hall: Denison Univ. Bull., vol. 38, no. 8, Sci. Lab., Jour., vol. 23, pp. 173-230, 8 pls., July, 1928.
29. Contributions to the geology of Foxe Land, Baffin Island; Part II, The cephalopods of Putnam Highland: Michigan, Univ., Mus. Paleontology, Contr., vol. 3, no. 3, pp. 25-70, 11 pls., November 10, 1928.
30. A restudy of American orthoconic Silurian cephalopods: Denison Univ. Bull., vol. 28, no. 10, Sci. Lab., Jour., vol. 23, pp. 236-320, 28 pls., December 31, 1928.

Fohs, F. Julius.

1. (and Robinson, Heath M.). Structural study of a part of northeast Texas with some stratigraphic sections (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, pp. 70-71, March 30, 1923.
2. Structural and stratigraphic data of northeast Texas petroleum area: Econ. Geology, vol. 18, no. 8, pp. 709-731, 1 fig., 3 pls. (incl. map), December, 1923.

Foley, Lyndon L.

1. The origin of the faults in Creek and Osage counties, Oklahoma (with discussion by F. H. Lahee, W. T. Thom, jr., W. A. J. M. van der Gracht, W. W. Rubey, and others): Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 3, pp. 293-303, 5 figs., March, 1926.
2. Mechanics of the Balcones and Mexia faulting: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 12, pp. 1261-1269, 7 figs., December, 1926.
3. Origin of folding in Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 6, pp. 639-640, June, 1927.
4. Review of Isostasy by William Bowie: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 2, pp. 218-223, 2 figs., February, 1928.

Folger, Anthony. See also Barwick, 1.

1. The Missouri-Iowa field conference: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 2, pp. 201-211, February, 1928.

Foran, W. T. See Paige, 5; Smith, P. S., 7.

Forbes, C. R. See McQueen, 1.

Forbes, J. J.

1. Coal losses of Tennessee: Tennessee, Dept. Educ., Div. Geology, Bull. 33-E, 36 pp., 2 figs., 1925.

Ford, William Ebenzer.

1. New mineral names: Am. Jour. Sci., 4th ser., vol. 47, pp. 446-448, June, 1919; vol. 49, pp. 452-453, June, 1920; 5th ser., vol. 1, pp. 516-518, June, 1921.

Ford, William Ebenzer—Continued.

2. A textbook of mineralogy, with an extended treatise on crystallography and physical mineralogy, by Edward Salisbury Dana. Third edition, revised and enlarged by William E. Ford. 720 pp., 1,050 figs., New York, John Wiley & Sons, 1922.

Forrester, Glenn C.

1. Origin of the buried Whirlpool-St. Davids gorge: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 244-248, 2 figs., September, 1926.
2. The Falls of Niagara. 155 pp., 27 figs., 15 pls., New York, D. Van Nostrand Company, 1928.

Forrester, J. B.

1. A short comment on Bulletin 371 [Richardson, G. B., Reconnaissance of the Book Cliffs coal field (1909)] of the U. S. Geological Survey: *Utah Acad. Sci., Trans.*, vol. 1, pp. 24-31, February, 1918.
2. A general survey of the Jurassic in southeastern Utah: *Utah Acad. Sci., Trans.*, vol. 1, pp. 33-43, February, 1918.

Foshag, William Frederick. See also Hess, 30; Larsen, 7, 19.

1. Famous mineral localities; Yuma County, Arizona: *Am. Mineralogist*, vol. 4, no. 12, pp. 149-150, December, 1919.
2. The chemical composition of hydrotalcite and the hydrotalcite group of minerals: *U. S. Nat. Mus., Proc.*, vol. 58, pp. 147-153, 1920.
3. Some recent accessions to the mineral collections of the United States National Museum: *U. S. Nat. Mus., Proc.*, vol. 58, pp. 303-305, 3 pls., 1920.
4. Sulphohalite from Searles Lake, California: *Am. Jour. Sci.*, 4th ser., vol. 49, pp. 76-77, January, 1920.
5. Thaumasite (and spurrite) from Crestmore, California: *Am. Mineralogist*, vol. 5, no. 4, pp. 80-81, April, 1920.
6. Apthitalite (glaserite) from Searles Lake, California: *Am. Jour. Sci.*, 4th ser., vol. 49, pp. 367-368, May, 1920.
7. Illustration of the hexagonal system; hematite from New Mexico: *Am. Mineralogist*, vol. 5, no. 8, pp. 149-150, 2 figs., August, 1920.
8. Plazolite, a new mineral [from Riverside, California]: *Am. Mineralogist*, vol. 5, no. 11, pp. 183-185, November, 1920.
9. The crystallography and chemical composition of creedite: *U. S. Nat. Mus., Proc.*, vol. 59, pp. 419-424, 3 figs., 1921.
10. The origin of the colemanite deposits of California: *Econ. Geology*, vol. 16, no. 3, pp. 199-214, April-May, 1921.
11. The isomorphic relations of the sulpho-salts of lead and copper: *Am. Jour. Sci.*, 5th ser., vol. 1, pp. 444-446, May, 1921.
12. New minerals: *Am. Mineralogist*, vol. 6, no. 8, p. 132, August, 1921; no. 9, pp. 140-141, September, 1921.
13. (and Larsen, E. S.). Eakleite from Isle Royale, Michigan: *Am. Mineralogist*, vol. 7, no. 2, pp. 23-24, February, 1922.
14. (and Wherry, E. T.). Notes on the composition of talc: *Am. Mineralogist*, vol. 7, no. 10, pp. 167-171, October, 1922.
15. Calico Hills, San Bernardino County, California: *Am. Mineralogist*, vol. 7, no. 12, pp. 208-209, December, 1922.
16. Catapleiite from Magnet Cove, Arkansas: *Am. Mineralogist*, vol. 8, no. 4, pp. 70-72, April, 1923.
17. Famous mineral localities: Furnace Creek, Death Valley [California]: *Am. Mineralogist*, vol. 9, no. 1, pp. 8-10, January, 1924.

Foshag, William Frederick—Continued.

18. Priceite from Furnace Creek, Inyo County, California: *Am. Mineralogist*, vol. 9, no. 1, pp. 11-13, January, 1924.
19. Centrallasite from Crestmore, California: *Am. Mineralogist*, vol. 9, no. 4, pp. 88-90, April, 1924.
20. The world's biggest borax deposits [California and Nevada]: *Eng. and Min. Jour.-Press*, vol. 118, no. 11, pp. 419-421, 6 figs., September 13, 1924.
21. (and Gage, R. B.). Chlorophoenicite, a new mineral from Franklin Furnace, New Jersey; *Washington Acad. Sci., Jour.*, vol. 14, no. 15, pp. 362-363, September 19, 1924.
22. Hedyphane from Franklin Furnace, New Jersey: *Am. Mineralogist*, vol. 10, no. 10, pp. 351-353, October, 1925.
23. The minerals of Obsidian Cliff, Yellowstone National Park, and their origin: *U. S. Nat. Mus., Proc.*, vol. 68, art. 17, 18 pp., 5 figs., 5 pls., 1926.
24. Saline lakes of the Mohave Desert region: *Econ. Geology*, vol. 21, no. 1, pp. 56-64, January-February, 1926.
25. The identity of newtonite with alunite: *Am. Mineralogist*, vol. 11, no. 2, pp. 33-35, February, 1926.
26. Radiated chrysotille from Franklin Furnace, New Jersey: *Am. Mineralogist*, vol. 11, no. 2, pp. 38-39, February, 1926.
27. Processes in contact metamorphism (discussion): *Econ. Geology*, vol. 21, no. 2, pp. 194-197, March-April, 1926.
28. (and Berman, Harry M., and Gage, Robert B.). The occurrence and properties of chlorophoenicite, a new arsenate from Franklin, New Jersey: *U. S. Nat. Mus., Proc.*, vol. 70, art. 20, 6 pp., 2 figs., 1927.
29. The selenite caves of Naica, Mexico: *Am. Mineralogist*, vol. 12, no. 6, pp. 252-256, 2 figs., June, 1927.
30. (and Clinton, H. G.). An occurrence of pitticite in Nevada: *Am. Mineralogist*, vol. 12, no. 7, pp. 290-292, July, 1927.
31. (and Hess, Frank L.). Rossite and metarossite, two new vanadates from Colorado: *U. S. Nat. Mus., Proc.*, vol. 72, no. 11, 12 pp., 2 figs., 1927.
32. Quicksilver deposits of the Pilot Mountains, Mineral County, Nevada: *U. S. Geol. Survey, Bull.* 795, pp. 113-123, 2 figs., 1 pl. (map), October 27, 1927; *Min. Jour. Phoenix, Ariz.*, vol. 11, no. 22, pp. 5-6, 12-14, 1 fig. (map), April 15, 1928.
33. The minerals of Mexico: *Smithsonian Inst., Explorations and Field Work in 1927*, pp. 21-26, 6 figs., 1928. (Pub. 2957.)

Foster, E. D. See Riddell, 1.

Foulk, Charles William.

1. Industrial water supplies of Ohio: *Ohio, Geol. Survey, 4th ser., Bull.* no. 29, 406 pp., 1925.

Fowke, Gerard.

1. The genesis of the Ohio River: *Indiana Acad. Sci., Proc.*, vol. 34, pp. 81-102, 3 figs., 1925.
2. Note on the preglacial drainage of the Tradewater River, Kentucky: *Indiana Acad. Sci., Proc.*, vol. 35, pp. 109-110, 1 fig., 1926.

Fox, James P.

1. Geomorphogeny of the Berkeley Hills between the city of Berkeley and San Pablo Bay (abstract) : Geol. Soc. America, Bull., vol. 37, no. 1, p. 211, March 30, 1926.

Fox, Leo S.

1. Some structural features of the east side of the San Joaquin Valley, California : Oil Bull., vol. 14, no. 6, pp. 587-588, 654, June, 1928.

Foye, Wilbur Garland.

1. A report of the geological work within the Rochester, Vermont, quadrangle : Vermont, State Geologist, 11th Rept., pp. 76-98, 1 pl., 5 figs. [1919].
2. A new occurrence of rhodonite : Am. Mineralogist, vol. 4, no. 10, pp. 124-125, October, 1919; [correction] vol. 5, no. 6, p. 120, June, 1920.
3. "Denudation," "erosion," "corrosion," and "corrasion" : Science, new ser., vol. 54, p. 130, August 12, 1921.
4. Mineral localities in the vicinity of Middletown, Connecticut : Am. Mineralogist, vol. 7, no. 1, pp. 4-12, 1 fig., January, 1922.
5. Structure of the Connecticut basin during the Newark epoch (abstract with discussion by W. J. Miller, J. B. Woodworth, W. M. Davis, C. E. Gordon, C. R. Longwell, H. B. Kummel, W. N. Rice, and L. S. Westgate) : Geol. Soc. America, Bull., vol. 33, no. 1, pp. 87-89, March 31, 1922.
6. Geology of the Guilford, Connecticut, quadrangle (abstract with discussion by B. K. Emerson) : Geol. Soc. America, Bull., vol. 33, no. 1, p. 147, March 31, 1922.
7. Origin of the Triassic trough of Connecticut : Jour. Geology, vol. 30, no. 8, pp. 690-699, 7 figs., November-December, 1922.
8. The New England intercollegiate geological excursion : Science, new ser., vol. 58, pp. 344-345, November 2, 1923.
9. Abnormal dips near the eastern boundary fault of the Connecticut Triassic : Science, new ser., vol. 60, p. 240, March 7, 1924.
10. Anterior range of Connecticut (abstract, with discussion by A. C. Lawson) : Geol. Soc. America, Bull., vol. 35, no. 1, p. 87, March 30, 1924; abstract, Pan-Am. Geologist, vol. 41, no. 2, p. 143, March, 1924.
11. Pillow structure in the Triassic basalts of Connecticut : Geol. Soc. America, Bull., vol. 35, no. 2, pp. 329-346, 12 figs., June 30, 1924.
12. The New England intercollegiate geologic excursion : Science, new ser., vol. 60, p. 378, October 24, 1924.
13. Geology and structure of the eastern highland of Connecticut (abstract) : Geol. Soc. America, Bull., vol. 36, no. 1, p. 166, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 157, March, 1925.
14. Correlation of the metamorphic rocks of northeastern Connecticut with those of adjacent portions of Massachusetts (abstract) : Geol. Soc. America, Bull., vol. 37, no. 1, p. 156, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 159, March, 1926.
15. The occurrence of thulite at Haddam, Connecticut : Am. Mineralogist, vol. 11, no. 8, pp. 210-213, 3 figs., August, 1926.
16. Fall excursion of the New England intercollegiate geologists : Science, new ser., vol. 64, p. 421, October 29, 1926.
17. The New England intercollegiate geological excursion : Science, new ser., vol. 66, p. 419, November 4, 1927.
18. The New England intercollegiate geological excursion : Science, new ser., vol. 68, pp. 486-487, November 16, 1928.

Foyles, Edward J.

1. The geology about Mills Springs, Monticello quadrangle, Kentucky: *Am. Mus. Novitates*, no. 11, 10 pp., 4 figs., June 17, 1921.
2. Preliminary report on the Ordovician formations of Vermont: Vermont, State Geologist, Thirteenth Rept., 1921-1922, pp. 71-86, 3 figs., 4 pls., 1923.
3. The geology of Shoreham, Bridport, and Fort Cassin, Vermont: Vermont, State Geologist, Fourteenth Rept., 1923-1924, pp. 204-217, 3 pls., 1924.
4. The stratigraphy of the townships of Addison, Panton, and southwestern Ferrisburg, Vermont: Vermont, State Geologist, 15th Rept., 1925-26, pp. 111-120, 1 pl. (map), 1927.
5. Locality list of Vermont invertebrate fossils: Vermont, State Geologist, 15th Rept., 1925-26, pp. 163-190, 1927.

Fralich, Charles D. See Torrey, 1.

Frame, James.

1. Further notes on the gold deposits of the southern Appalachians: *Eng. and Min. Jour.*, vol. 111, no. 1, p. 4, January 1, 1921.

Frankenfield, John S. See Hawkins, 8.

Franks, Arthur J.

1. (and Goodier, B. D.). Preliminary study of the organic matter of Colorado oil shales: *Colorado School of Mines, Quart.*, vol. 17, no. 4, Supplement A, 16 pp., October, 1922.

Fraser, F. J.

1. A simple apparatus for heavy mineral separation: *Econ. Geology*, vol. 23, no. 1, pp. 99-100, January, 1928.
2. Eastend area, Cypress Hills, Saskatchewan; petrography of the sediments, mechanical analysis: *Canada, Geol. Survey, Summ. Rept.*, 1927, pt. B, pp. 44-53, 1928.

Fraser, H. J.

1. Experimental studies in the formation of varves (abstract): *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 21, p. xciii, 1927.

Fréchette, Howells.

1. Iron oxide pigments in Ontario: *Canada, Mines Branch, Summ. Rept.*, 1921, pp. 9-12, 1923.
2. Mineral pigments: *Canada, Mines Branch, Summ. Rept.*, 1922, pp. 7-9, 1924.

Freeman, Horace.

1. The genesis of sulphide ores: *Eng. and Min. Jour.-Press*, vol. 120, no. 25, pp. 973-975, December 19, 1925; *Bol. minero*, t. 21, no. 1, pp. 8-12, January, 1926.
2. Genesis of sulphide ores: *Eng. and Min. Jour.-Press*, vol. 121, no. 14, pp. 571-572, April 3, 1926.
3. Genesis of sulphide ores: *Eng. and Min. Jour.*, vol. 122, no. 9, pp. 340-341, August 28, 1926.

Freeman, John R.

1. Tilting of the earth in the Great Lakes region, pp. 149-171B in his *Regulation of the Great Lakes . . .*; a report to the Chicago Sanitary District, 1926.

Freeman, Lawrence.

1. Features common to the Appalachian zinc deposits (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, p. 176, 1928; *Ohio Jour. Sci.*, vol. 28, no. 3, p. 154, May, 1928.

Freeman, Otis W.

1. Geography and geology of Fergus County [Montana]. *Fergus County High School Bulletin* 2, 71 pp., illus., Lewistown, Montana, 1919.
2. Oil in the Quadrant formation in Montana: *Eng. and Min. Jour.-Press*, vol. 113, no. 19, pp. 825-827, May 13, 1922.
3. New occurrence of the Belt terrane in Montana: *Science*, new ser., vol. 57, p. 418, April 6, 1923.
4. The origin of Swimming Woman Canyon, Big Snowy Mountains, Montana, an example of a pseudo-cirque formed by landslide sapping: *Jour. Geology*, vol. 33, no. 1, pp. 75-79, 2 figs., January-February, 1925.
5. Scabland mounds of eastern Washington: *Science*, new ser., vol. 64, pp. 450-451, November 5, 1926.
6. Mammoth found in loess of Washington: *Science*, new ser., vol. 64, p. 477, November 12, 1926.

Fretz, A. Henry.

1. Memorial of F. B. Peck: *Am. Mineralogist*, vol. 11, no. 3, pp. 55-56, March, 1926.

Freudenberg, Wilhelm.

1. *Geologie von Mexiko; dargestellt nach der Literatur und nach eigenen Forschungen.* 232 pp., 28 figs., 2 pls., Berlin, Gebrüder Borntraeger, 1921.
2. Die Säugetierfauna des Pliocäns und Postpliocäns von Mexiko; II Teil, Mastodonten und Elefanten: *Geologische und Palaeontologische Abhandlungen (Pompeckj und Von Huene)*, Bd. 18 (N. F., Bd. 14), H. 3, 76 pp., 28 figs., 9 pls., Jena, 1922.

Frick, Childs.

1. Extinct vertebrate faunas of the badlands of Bautista Creek and San Timoteo Cañon, southern California: *California, Univ., Dept. Geology, Bull.*, vol. 12, no. 5, pp. 277-424, 165 figs., 8 pls., December 28, 1921.
2. Prehistoric evidence: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 26, no. 5, pp. 440-448, 3 figs., September-October, 1926.

Friedlaender, Immanuel.

1. Vulkanische Nachrichten über den Ausbruch in San Salvador: *Zeitschr. Vulkanologie*, Bd. 4, H. 4, p. 308, 1 pl., December, 1918.
2. Notizen über die Bogosloff-Inseln: *Zeitschr. Vulkanologie*, Bd. 5, H. 1, pp. 51-55, 1 fig., June, 1919.
3. Vulkanische Ereignisse in Mexiko; Erdbeben und Ausbruch (?) am Orizaba: *Zeitschr. Vulkanologie*, Bd. 6, H. 2, pp. 80-85, 1 fig., June, 1921.
4. Vulkanische Ereignisse in Mexiko; Ausbruch des Popocatepetl: *Zeitschr. Vulkanologie*, Bd. 6, H. 2, pp. 85-88, 2 pls., June, 1921.
5. La erupción del Popocatepetl [México]: *Soc. cient. "Antonio Alzate," Mem. y Rev.*, t. 40, nos. 2-6, 3 pls., 1922.
6. Die Insel Kaula in der Hawaii Gruppe: *Zeitschr. Vulkanologie*, Bd. 7, H. 2, pp. 107-108, 1 fig., 2 pls., July, 1923.

Friedlaender, Immanuel—Continued.

7. (and Sonder, Richard A.). Ueber das Vulkangebiet von San Martin Tuxtla in Mexiko: Zeitschr. Vulkanologie, Bd. 7, H. 3, pp. 162–187, 3 figs., 8 pls. (incl. map), November, 1923.
8. Bemerkungen zu den Abbildungen vom Kilauea-Ausbruch im Mai, 1924: Zeitschr. Vulkanologie, Bd. 10, H. 1, p. 47, 2 pls., September, 1926.
9. Ausbruch des Mauna Loa, Hawaii, im April, 1926: Zeitschr. Vulkanologie, Bd. 10, H. 1, pp. 48–49, 1 fig., September, 1926.

Fritel, P. H.

1. Note sur les aralias des flores crétaciques de l'Amérique du Nord et du Groenland: Soc. géol. France, Bull., 4^e sér., t. 14, pp. 1–22, 13 figs., 1914.

Fritz, Madeleine. See also Parks, 9.

1. The stratigraphy and paleontology of Toronto and vicinity, Part IV; Hydrozoa, Echinodermata, Trilobita, markings: Ontario Dept. Mines, 32d Ann. Rept., vol. 32, pt. 7, pp. 1–34, 5 figs., 3 pls., 1925.
2. The stratigraphy and paleontology of the Workman's Creek section of the Cincinnati series of Ontario: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, sec. 4, pp. 77–107, 1 fig., 1 table, 4 pls., 1926.

Frost, Frederick H.

1. Statistical identification; I, as applied to *Parapavo*: California, Univ., Dept. Geol. Sci., Bull., vol. 17, no. 1, pp. 57–62, September 30, 1927.
2. The Pleistocene flora of Rancho La Brea: California, Univ., Pub. in Botany, vol. 14, no. 3, pp. 73–98, 5 pls., November 30, 1927.

Fryxell, F. M. See also Romer, 14.

1. The physiography of the region of Chicago. 55 pp., 17 figs. (incl. maps), 5 pls. (maps), University of Chicago Press, Chicago, Illinois, April, 1927.

Fuller, Margaret Bradley.

1. The physiographic development of the Big Thompson River Valley in Colorado: Jour. Geology, vol. 31, no. 2, pp. 126–137, 7 figs., February–March, 1923.
2. General features of pre-Cambrian structure along the Big Thompson River in Colorado: Jour. Geology, vol. 32, no. 1, pp. 49–63, 11 figs., January–February, 1924.
3. An occurrence of witherite in the Altyn limestone at Many Glacier, Montana: Am. Mineralogist, vol. 9, no. 7, p. 154, July, 1924.
4. Early Quaternic drainage diversions around Mount Olympus, Colorado: Pan-Am. Geologist, vol. 43, no. 1, pp. 51–54, 2 figs., February, 1925.
5. The bearing of some remarkable potholes on the early Pleistocene glaciation of the Front Range, Colorado: Jour. Geology, vol. 33, no. 3, pp. 224–235, 11 figs., April–May, 1925.
6. Contact metamorphism in the Big Thompson schist of north central Colorado: Am. Jour. Sci., 5th ser., vol. 11, pp. 194–200, 1 fig., March, 1926.
7. Pre-Cambrian sedimentation in northern Colorado (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 161, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, pp. 161–162, March, 1926.
8. The geology of the Big Thompson River Valley in Colorado from the Continental Divide to the foothills area (abstract): Chicago, Univ., Abstracts of Theses, Sci. Ser., vol. 2, pp. 217–222, September, 1926.

Fuller, Margaret Bradley—Continued.

9. Stratigraphic boundaries in Glacier National Park, Montana (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 153, March, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 154, March, 1927.
10. Multiple-level cirques: Illinois State Acad. Sci., Trans., vol. 20, pp. 297-303, 6 figs., 2 pls., March, 1928.

Fuller, Myron Leslie.

1. (and others). Water problems of the Bend series [Texas]; general discussion: Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 151-162, 1919.
2. Quick method of reconnaissance mapping: Econ. Geology, vol. 14, no. 5, pp. 411-423, August, 1919.
3. Relation of oil to carbon ratios of Pennsylvanian coals in north Texas: Econ. Geology, vol. 14, no. 7, pp. 536-542, 1 fig., November, 1919.
4. Carbon ratios in Carboniferous coals of Oklahoma, and their relation to petroleum: Econ. Geology, vol. 15, no. 3, pp. 225-235, 1 fig., April-May, 1920.

Fuller, Richard E. See also Peacock, 1.

1. The mode of origin of the color of certain varicolored obsidians [south-central Oregon]: Jour. Geology, vol. 35, no. 6, pp. 570-573, 4 figs., August-September, 1927.
2. The closing phase of a fissure eruption: Am. Jour. Sci., 5th ser., vol. 14, pp. 228-230, 2 figs., September, 1927.
3. The Asotin craters of the Columbia River basalt: Jour. Geology, vol. 36, no. 1, pp. 56-74, 7 figs., January-February, 1928.

Funkhouser, William Delbert.

1. (and Webb, W. S.). Ancient life in Kentucky: Kentucky Geol. Survey, ser. 6, vol. 34, 349 pp., 176 illus., 1928.

Furcron, A. S.

1. An unusual oolite near Hayfield, Frederick County, Virginia (abstract): Iowa Acad. Sci., Proc., 1925, vol. 32, p. 360 [1926].

Furlong, Eustace Leopold. See also Stock, 9, 16, 19, 21, 22.

1. Notes on the occurrence of mammalian remains in the Pleistocene of Mexico, with a description of a new species, *Capromeryx mexicana*: California, Univ., Dept. Geol. Sci., Bull., vol. 15, no. 5, pp. 137-152, 11 figs., 1925.
2. The occurrence and phylogenetic status of *Merycodus* from the Mohave Desert Tertiary: California, Univ., Dept. Geol. Sci., Bull., vol. 17, no. 4, pp. 145-186, 28 figs., 5 pls., November 22, 1927.

G.

- *1. James Furman Kemp: Canadian Min. and Met. Bull., no. 177, pp. 22-25, portr., January, 1927.

Gaby, Walter E.

1. The Yerington district, Nevada: Min. and Sci. Press, vol. 118, pp. 625-626, May 10, 1919.
2. Combination dip chart and protractor: Min. and Sci. Press, vol. 123, no. 6, p. 201, 2 figs., August 6, 1921.
3. A slide-rule dip chart: Mining and Metallurgy, no. 189, pp. 48-50, 2 figs., September, 1922.

Gaertner, H. R. v.

1. (and Machatschki, Felix). Der Thomsonit aus dem Basalt von Disko, Grönland: Centralbl. Mineralogie, Abt. A, no. 11, pp. 365-366, 1927.

Gage, Robert B. See also Foshag, 21, 28.

1. (and Larsen, Esper S., and Vassar, Helen E.). Schallerite, a new arsenosilicate mineral from Franklin Furnace, New Jersey: Am. Mineralogist, vol. 10, no. 1, pp. 9-11, January, 1925.

Gale, Hoyt R.

1. Summary of west coast subgenus *Trophoscycon* (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 315-316, May, 1928.

Gale, Hoyt Stoddard.

1. (and Hicks, W. B.). Potash in 1917: U. S. Geol. Survey, Mineral Resources, 1917, pt. 2, pp. 397-481, 1 fig., March 13, 1919.
2. Saltpeter in Guatemala: Eng. and Min. Jour., vol. 107, pp. 1025-1031, 6 figs., June 14, 1919.
3. The Callville Wash colemanite deposit [Clark County, Nevada]: Eng. and Min. Jour., vol. 112, no. 14, pp. 524-530, 5 figs., October 1, 1921.
4. Priceite, the borate mineral in Curry County, Oregon: Min. and Sci. Press, vol. 123, no. 26, pp. 895-898, 2 figs., December 24, 1921.
5. Borate deposits near Kramer, California: Am. Inst. Min. and Met. Eng., Trans. [preprint], no. 1553, 15 pp., 1 fig., February, 1926; vol. 73, pp. 449-463, 1 fig., 1926; abstract, Mining and Metallurgy, vol. 7, no. 233, p. 227, May, 1926.
6. A new borate mineral [kernite, California]: Eng. and Min. Jour., vol. 123, no. 1, p. 10, January 1, 1927.

Gale, Henry G. See Michelson, 1.

Galloway, Jesse James. See Ashley, 16; Ulrich, 6.

1. Geology and natural resources of Rutherford County, Tennessee: Tennessee State Geol. Survey, Bull. 22, 81 pp., pls., map, 1919.
2. The rounding of grains of sand by solution: Am. Jour. Sci., 4th ser., vol. 47, pp. 270-280, 5 figs., April, 1919.
3. Value of the physical characters of sand grains in the interpretation of the origin of sandstones (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 104-105, March 31, 1922.
4. Red limestones and their geologic significance (abstract with discussion by I. C. White, G. H. Chadwick, T. W. Stanton, and R. S. Bassler): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 105-107, March 31, 1922.
5. Nature of *Taonurus* and its use in estimating geologic time (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 199, March 31, 1922.
6. Revision of the classification and nomenclature of Foraminifera (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 235-236, March 30, 1926.
7. Methods of correlation by means of Foraminifera: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 6, pp. 562-567, June, 1926.
8. (and Wissler, Stanley G.). Pleistocene Foraminifera from the Lomita quarry, Palos Verdes Hills, California: Jour. Paleontology, vol., no. 1, pp. 35-87, 6 pls., July, 1927; correction of names, no. 3, p. 193, December, 1927.
9. Notes on the genus *Polylepidina* and a new species: Jour. Paleontology, vol. 1, no. 4, pp. 299-303, 3 figs., 1 pl., January, 1928.

Galloway, Jesse James—Continued.

10. A revision of the family Orbitoididae: Jour. Paleontology, vol. 2, no. 1, pp. 45-69, 4 figs., March, 1928.
11. Structure and phylogeny of orbitoid Foraminifera (abstract): Pan-Am. Geologist, vol. 49, no. 3, pp. 230-231, April, 1928; Geol. Soc. America, Bull., vol. 39, no. 1, pp. 296, March 30, 1928.
12. The change in ideas about Foraminifera: Jour. Paleontology, vol. 2, no. 3, pp. 216-228, September, 1928.
13. (and Harlton, Bruce H.). Some Pennsylvania Foraminifera of Oklahoma, with special reference to the genus *Orobias*: Jour. Paleontology, vol. 2, no. 4, pp. 338-357, 2 pls., December, 1928.

Galloway, John D.

1. Annual report of the minister of mines [of British Columbia] for the year ended 31st December, 1924 . . . 388 pp., figs., pls., maps, Victoria, B. C., 1925.
2. Notes on the Cariboo district of British Columbia: Canadian Inst. Min. and Met., Bull. no. 160, pp. 812-823, 3 figs., August, 1925; Trans., vol. 28, pp. 401-413, 4 figs. [1926].
3. Annual report of the minister of mines [of British Columbia] for the year ended 31st December, 1925 . . . 466 pp., figs., pls., maps, Victoria, B. C., 1926.
4. Annual report of the minister of mines [of British Columbia] for the year ended 31st December, 1926 . . . 468 pp., figs., pls., maps, Victoria, B. C., 1927.
5. Annual report of the minister of mines [of British Columbia] for the year ended 31st December, 1927 . . . 501 pp., figs., pls., maps, Victoria, B. C., 1928.

Galpin, Sidney Longman.

1. The Rockford geodes (abstract): Iowa Acad. Sci., Proc. 1922, vol. 29, pp. 128-129 [1924?].
2. The geology of the more refractory clays and shales of Iowa: Iowa Geol. Survey, vol. 31, pp. 53-89, 7 figs., 2 pls., [1926?].

Gálvez, Vicente.

1. Apuntes sobre el mineral de Puerto de Nieto, Estado de Guanajuato Mexico, Inst. geol., Anales, no. 6, pp. 1-9, 1 pl. (map), 1919.
2. Exploración en la Península de Baja California por la Comisión Exploradora del Pacífico: Mexico, Inst. geol., Bol. no. 39, 108 pp., 67 pls., 1922.
3. Informe preliminar acerca de las aguas subterráneas de la parte de Valle de San Luis Potosí comprendida entre la ciudad de este mismo nombre y Jarral de Berrio: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 12, pp. 3-20, map, August, 1925.
4. Informe preliminar acerca de la hidrología subterránea de la cuenca entre San Luis Potosí y Alaquines, Estado de San Luis Potosí: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 17, pp. 3-19, June, 1926.
5. (and Hernández, Apolinar). Informe preliminar sobre la hidrología subterránea de la cuenca entre Pendencia y Ranchito, Estado de San Luis Potosí: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 17, pp. 31-42, June, 1926.

Gálvez, Vicente—Continued.

6. Los pueblos de Villa de Álvarez, Coquimatlán, Ixtlahuacán, Tecomán y Minatitlán, del Estado de Colima, considerados en sus recursos en aguas subterráneas: Mexico, Inst. geol., Anales, t. 2, no. 4, pp. 91-127, 45 figs., 1926.
7. Algunas exploraciones en el distrito sur de la Península de Baja California: Mexico, Inst. geol., Anales t. 2, nos. 6-10, pp. 157-194, 25 pls., map, 1927.
8. Apuntes sobre algunos recursos de agua de la Colonia Lourdes en las proximidades de Saltillo, Estado de Coahuila: Mexico, Inst. geol., Anales, t. 2, nos. 6-10, pp. 198-201, 1927.

Gannett, R. W.

1. Experiments relating to the enrichment of tungsten ores: Econ. Geology, vol. 14, no. 1, pp. 68-78, January-February, 1919.

Garbrecht, Louis.

1. New mining fields in eastern Nicaragua: Eng. and Min. Jour., vol. 109, pp. 791-797, 5 figs., April 3, 1920.

García, José Aurelio. See also Paredes, 3.

1. Monografía del grafito: Bol. minero, t. 21, no. 2, pp. 64-75, 1 pl. February, 1926.
2. Monografía del estaño: Bol. minero, t. 22, no. 1, pp. 6-29, 1 pl. (map), July, 1926.

Gardescu, Ionel I. See also Ruedemann, P., 1.

1. (and Johnson, R. H.). The effect of stratigraphic variation on folding: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 4, pp. 481-483, 1 pl., July-August, 1921.

Gardner, E. D. See Lausen, 3.

Gardner, H. F.

1. The calcite cave in the New York State Museum: Am. Mineralogist, vol. 5, no. 1, pp. 3-5, January, 1920.

Gardner, James Henry.

1. Rock distortion on local structures in the oil fields of Oklahoma (with discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 3, pp. 228-243, 7 figs., May-June, 1922.
2. Volcanic ash in North Canadian Valley, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 5, pp. 576-578, September-October, 1923.
3. Some factors influencing Kentucky as an oil State (abstract): Kentucky Acad. Sci., Trans., vol. 1, pp. 48-50, 1924.
4. Map of the geology of the Hartford quadrangle, Ohio, Butler, and Muhlenberg counties, Kentucky, by James H. Gardner: Kentucky Geol. Survey, Ser. 6, 1925. Scale, 1:62,500.
5. The Elm Lick coal bed [Ohio County]: Kentucky Geol. Survey, Ser. 6, vol. 26, pp. 129-154, 1927.
6. "Samplograph" recommended for subsurface correlation: Oil Weekly, vol. 46, no. 2, p. 34, July 1, 1927.
7. The samplograph: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 8, pp. 867-868, August, 1927.

Gardner, Julia Anna. See also Cooke, C. W., 6.

1. (and Aldrich, T. H.). Mollusca from the upper Miocene of South Carolina with descriptions of new species: Acad. Nat. Sci. Philadelphia, Proc., vol. 71, pt. 1, pp. 17-53, 4 pls., 1919.
2. New species of Mollusca from the Eocene deposits of southwestern Texas: U. S. Geol. Survey, Prof. Paper 131, pp. 109-115, 5 pls., February 12, 1923.
3. Fossiliferous marine Wilcox in Texas: Am. Jour. Sci., 5th ser., vol. 7, pp. 141-145, February, 1924.
4. Coastal Plain and European Miocene and Pliocene mollusks: Geol. Soc. America, Bull., vol. 35, no. 4, pp. 857-866, December 30, 1924; abstract, no. 1, p. 175, March 30, 1924.
5. The detection of the Chipola fauna in the Marks Head marl: Washington Acad. Sci., Jour., vol. 15, no. 12, pp. 264-268, June 19, 1925.
6. A new Midway brachiopod, Butler salt dome, Texas: Am. Jour. Sci., 5th ser., vol. 10, pp. 134-138, 1 pl., August, 1925.
7. The molluscan fauna of the Alum Bluff group of Florida: U. S. Geol. Survey, Prof. Paper 142, pp. 1-184, 28 pls., 1926; pp. 185-249, 8 pls., June 5, 1928.
8. The nomenclature of the superspecific groups of *Corbula* in the lower Miocene of Florida: Nautilus, vol. 40, no. 2, pp. 41-47, October, 1926.
9. On Scott's new correlation of the Texas Midway: Am. Jour. Sci., 5th ser., vol. 12, pp. 452-455, November, 1926.
10. The restoration of *Ostrea multilirata* Conrad 1857: Washington Acad. Sci., Jour., vol. 16, no. 19, pp. 513-514, November 18, 1926.
11. New species of mollusks from the Eocene of Texas: Washington Acad. Sci., Jour., vol. 17, no. 14, pp. 362-383, 4 pls., August 19, 1927.
12. The correlation of the marine Yegua of the type sections [Texas]: Jour. Paleontology, vol. 1, no. 3, pp. 245-251, December, 1927.
13. Tertiary formations of Texas (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 295-296; May, 1928; Geol. Soc. America, Bull., vol. 39, no. 1, p. 277, March 30, 1928.
14. A new gastropod [*Turritella pilsbryi*] from the Miocene of Virginia: Washington Acad. Sci., Jour., vol. 18, no. 20, pp. 561-563, 1 fig. December 4, 1928.

Gardner, Nathaniel Lyon.

1. Two new fossil algae from the Miocene: Acad. Nat. Sci. Philadelphia Proc., vol. 75, pp. 361-363, 1 fig., 1 pl., 1924.

Garfias, Valentin Richard. See also Ordóñez, 2.

1. Petroleum resources of the world. 243 pp., maps, New York, John Wiley & Sons, 1923.

Garnett, T. H. See Boericke, 1.

Garrett, Dan L.

1. Stratigraphy and structure of northeastern New Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 1, pp. 73-82, 2 figs., 1920.

Garrison, R. H. See Vickery, 7.

Gauthier, Henri.

1. Road material surveys in the city and district of Montreal, Quebec: Canada, Geol. Survey, Mem. 114, 52 pp., 4 pls., 1 fig., 1 map, 1919.

Gavin, Martin Joseph.

1. Oil shale, an historical, technical, and economic study: U. S. Bur. Mines, Bull. 210, 201 pp., 4 figs., 18 pls., Denver, 1922.

Gaylord, Earl Graham. See also Hanna, 12.

1. (and Taff, J. A.). Geological organization of an oil company: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 5, pp. 651-661, September-October, 1924.
2. (and Hanna, G. D.). Correlation of organic shales in the southern end of the San Joaquin Valley, California: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 228-234, 2 pls., March-April, 1925.

Gedney, Edwin K. See Brown, C. W., 3; Fisher, L. W., 2.

Geijer, Per.

1. Replacement and folding: Econ. Geology, vol. 19, no. 3, pp. 281-285, April-May, 1924.
2. Processes in contact metamorphism: Econ. Geology, vol. 20, no. 7, pp. 689-690, November, 1925.
3. The publishing of geological information: Econ. Geology, vol. 21, no. 6, pp. 605-609, September, 1926.
4. James Furman Kemp: Geol. Fören. Stockholm, Förh., Bd. 48, H. 4, p. 593, November-December, 1926.
5. Facts and theory in mining geology: Econ. Geology, vol. 22, no. 3, pp. 300-303, May, 1927.
6. A fault surface (editorial): Econ. Geology, vol. 23, no. 7, pp. 804-805, November, 1928.

Geis, W. H.

1. The origin of light oils in the Rocky Mountain region (with discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 5, pp. 488-506, 1 fig., September-October, 1923.

Gentry, Bruce.

1. The Texas lignite industry: Coal Age, vol. 16, pp. 59-60, 1 fig. (map), July 10, 1919.

George, Harold Coulter.

1. The Alaska oil fields: Eng. and Min. Jour.-Press, vol. 114, no. 27, pp. 1163-1167, 4 figs., December 30, 1922.
2. (and Bunn, John R.). Petroleum engineering in the Fox and Graham oil and gas fields, Carter County, Oklahoma: 81 pp., 4 figs., U. S., Bur. Mines, in cooperation with Office of Indian Affairs, The State of Oklahoma, and Ardmore Chamber of Commerce, 1924. [Mimeographed.]
3. Some stalactitic forms of marcasite [lead and zinc district, Wisconsin and Illinois]: Oklahoma Acad. Sci., Proc., vol. 5, 1925 (Oklahoma, Univ., Bull., new ser., no. 330, Univ. Studies no. 22), pp. 125-127, 1 fig., April 1, 1926.
4. Some features of ore bodies formed in synclines by meteoric waters: Oklahoma Acad. Sci., Proc., vol. 6, pt. 2, 1926 (Oklahoma, Univ., Bull., new ser. no. 348), pp. 279-285, 2 figs., January 1, 1927.
5. (and Cloud, W. F.). Oil sands and production relations: Oklahoma Geol. Survey, Bull. no. 43, 142 pp., 19 figs., August, 1927.

George, P. W.

1. Experiments with Eötvös torsion balance in the Tri-State zinc and lead district: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 65, 9 pp., 6 figs., February, 1928.

George, Russell D. See also Stone, 11.

1. (and others). Mineral waters of Colorado: Colorado Geol. Survey, Bull. 11, 474, pp., 40 figs., 2 pls., 1920.
2. Oil shales of Colorado: Colorado Geol. Survey, Bull. 25, 78 pp., 10 figs., 2 maps, 1921.
3. Notes on the geology of the line of the proposed Moffat tunnel: Colorado Geol. Survey, 11 pp., July, 1922.
4. Memorial of Richard Charles Hills: Geol. Soc. America, Bull., vol. 35, no. 1, pp. 43-46, portr., March 30, 1924.
5. Origin of oil shales; geology and distribution of oil shales. In McKee, Ralph H., Shale oil, pp. 27-36, 37-43, 60-73, 2 figs., New York, 1925.
6. Geology and natural resources of Colorado. 228 pp., figs., pls, maps, published by the University of Colorado, Boulder, Colorado, 1927.
7. Geological outlook for Colorado ores: Pan-Am. Geologist, vol. 49, no. 2, pp. 111-116, March, 1928.

George, William O.

1. The relation of the physical properties of natural glasses to their chemical composition: Jour. Geology, vol. 32, no. 5, pp. 353-372, 5 figs., July-August, 1924.

Gerrie, William. See also Walker, 55.

1. Molydenite in Lacorne and Malartic townships, Quebec: Toronto, Univ., Studies, Geol. ser. no. 24, pp. 37-40, 1927.

Gerry, C. N.

1. Gold, silver, copper, lead, and zinc in Idaho and Washington in 1917: U. S. Geological Survey, Mineral Resources, 1917, pt. 1, pp. 457-507, April 3, 1919.
2. Gold, silver, copper, lead, and zinc in Montana in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 265-302, February 26, 1920.
3. Gold, silver, copper, lead, and zinc in Idaho and Washington in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 461-511, February 27, 1920.
4. Gold, silver, copper, lead, and zinc in Montana in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 1, pp. 195-219, December 17, 1921.
5. Gold, silver, copper, lead, and zinc in Idaho in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 1, pp. 239-259, December 27, 1921.
6. Gold, silver, copper, lead, and zinc in Washington in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 1, pp. 261-269, December 27, 1921.
7. Gold, silver, copper, lead, and zinc in Montana in 1921; mines report: U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 283-309, November 17, 1922.
8. Gold, silver, copper, lead, and zinc in Idaho (mines report): U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 399-420, February 12, 1923.
9. Gold, silver, copper, lead, and zinc in Washington (mines report): U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 421-428, February 12, 1923.

Gerry, C. N.—Continued.

10. Gold, silver, copper, lead, and zinc in Idaho in 1922 (mines report) : U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 217-244, December 18, 1923.
11. Gold, silver, copper, lead, and zinc in Washington in 1922 (mines report) : U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 245-256, December 18, 1923.
12. Gold, silver, copper, lead, and zinc in Montana in 1922 (mines report) : U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 453-488, March 12, 1924.
13. Gold, silver, copper, lead, and zinc in Idaho (mine report) : U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 375-404, February 12, 1925.
14. Gold, silver, copper, lead, and zinc in Washington (mine report) : U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 405-416, February 12, 1925.
15. Gold, silver, copper, lead, and zinc in Montana in 1923 (mine report) : U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 447-479, March 18, 1925.

Gester, G. C.

1. Observations relating to the origin and accumulation of oil in California : Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 9, pp. 892-900, September, 1926.
2. Origin and accumulation of oil in California (abstract) : Geol. Soc. America, Bull., vol. 38, no. 1, pp. 200-202, March 30, 1927.

Gester, S. H.

1. Huntington Beach oil field, Orange County, California : Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 1, pp. 41-46, 2 figs., January-February, 1924.

Gianella, Vincent P.

1. Minerals of Sespe formation, California, and their bearing on its origin : Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 7, pp. 747-752, July, 1928.

Gibson, R. E. See Adams, L. H., 8.

Gibson, Russell. See Crawford, R. D., 3.

Gibson, Thomas W.

1. Statistical review of the mineral industry of Ontario for 1918. Ontario Bur. Mines, 28th Ann. Rept., 1919, pp. 1-95, illus., Toronto, 1919.
2. The alleged coal beds at Sudbury [Ontario] : Canadian Min. Jour., vol. 43, no. 33, pp. 554-555, August 18, 1922.

Gidley, James Williams. See also Bryan, 23; Miller, G. S., 1; Wade, B., 3.

1. Significance of divergence of the first digit in the primitive mammalian foot : Washington Acad. Sci., Jour., vol. 9, no. 10, pp. 273-280, May 19, 1919.
2. New species of claudodonts from the Fort Union (basal Eocene) of Montana : Am. Mus. Nat. Hist., Bull., vol. 41, pp. 541-556, 10 figs., 1 pl., December 8, 1919.
3. A Pleistocene cave deposit of western Maryland : Smithsonian Inst., Ann. Rept., 1918, pp. 281-287, 6 pls., 1920.
4. Pleistocene peccaries from the Cumberland cave deposit : U. S. Nat. Mus., Proc., vol. 57, pp. 651-678, 2 pls., 13 figs., 1920.

Gidley, James Williams—Continued.

5. Preliminary report on fossil vertebrates of the San Pedro Valley, Arizona, with descriptions of new species of Rodentia and Lagomorpha: U. S. Geol. Survey, Prof. Paper 131, pp. 119-131, 2 pls., December 26, 1922.
6. Paleocene primates of the Fort Union, with discussion of relationships of Eocene primates: U. S. Nat. Mus., Proc., vol. 63, art. 1, 38 pp., 4 figs., 5 pls., 1923.
7. Fossil Proboscidea and Edentata of the San Pedro Valley, Arizona: U. S. Geol. Survey, Prof. Paper 140, pp. 83-95, 13 pls., February 8, 1926.
8. Fossil man in Florida (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 239-240, March 30, 1926.
9. (and Loomis, Frederic B.). Fossil man in Florida: Am. Jour. Sci., 5th ser., vol. 12, pp. 254-264, September, 1926.
10. American wild horses: Sci. Monthly, vol. 25, no. 3, pp. 265-271, 7 figs., September, 1927.
11. Continuing the elephant hunt: Smithsonian Inst., Explorations and Field Work in 1927, pp. 11-16, 7 figs., 1928. (Pub. 2957.)
12. A new species of bear from the Pleistocene of Florida: Washington Acad. Sci., Jour., vol. 18, no. 15, pp. 430-433, September 19, 1928.

Gilbert, Chester Garfield.

1. (and Pogue, Joseph E.). The mineral resources of the United States; the energy resources of the United States, a field for reconstruction: U. S. Nat. Mus., Bull. 102, vol. 1, 165 pp., 8 pls., 15 figs., 1919.

Gilbert, Geoffrey.

1. Oxidation and enrichment at Ducktown, Tennessee (with discussion): Am. Inst. Min. and Met. Eng., Trans., vol. 70, pp. 998-1023, 12 figs., 1924; [preprint] no. 1318, 23 pp., 2 figs., March, 1924; abstract, Mining and Metallurgy, vol. 5, no. 212, pp. 393-394, August, 1924.
2. The relation of hardness to the sequence of the ore minerals: Econ. Geology, vol. 19, no. 7, pp. 668-673, November, 1924.
3. The antipathy of bornite and pyrrhotite: Econ. Geology, vol. 20, no. 4, pp. 364-370, June-July, 1925.
4. Some magnetite-hematite relations: Econ. Geology, vol. 20, no. 6, pp. 587-596, 1 fig., September-October, 1925.
5. The significance of hematite in certain ore deposits: Econ. Geology, vol. 21, no. 6, pp. 560-577, 1 fig., September, 1926.
6. Changes in the oxidation of iron in magnetite (discussion): Econ. Geology, vol. 22, no. 3, pp. 308-310, May, 1927.
7. Gammon River area and Rickaby Lake schist belt, District of Kenora (Patricia portion): Ontario Dept. Mines, 36th Ann. Rept., vol. 36, pt. 3, pp. 73-84, 1 fig., map, 1928.

Gilbert, Grove Karl, 1843-1918.

1. Studies of Basin Range structure: U. S. Geol. Survey, Prof. Paper 153, 92 pp., 57 figs., 40 pls., 1928.

Gilbert, James Zacchaeus. See also Jordan, D. S., 2.

1. Family Muraenidae, *Deprandus lestes* Jordan and Gilbert, new genus and species: Southern California Acad. Sci., Bull., vol. 20, pt. 1, pp. 29-30, 1 fig., April, 1921.

Gilbert, James Zacchaeus—Continued.

2. The bone drift of the tar beds of Rancho La Brea [Los Angeles, California]: Southern California Acad. Sci., Bull., vol. 26, pt. 3, pp. 59-66, 8 figs., September-December, 1927.

Giles, Albert William.

1. Brecciation in the Niagara limestone at Rochester, New York: Am. Jour. Sci., 4th ser., vol. 47, pp. 349-354, 2 figs., May, 1919.
2. Minerals in the Niagara limestone of western New York: Rochester Acad. Sci., Proc., vol. 6, no. 2, pp. 57-72, December, 1920.
3. The geology and coal resources of Dickenson County, Virginia: Virginia Geol. Survey, Bull. no. 21, 224 pp., 21 figs., 18 pls. (incl. maps), 1921.
4. The geology and coal resources of the coal-bearing portion of Lee County, Virginia: Virginia Geol. Survey, Bull. no. 26, pp. 1-177, 11 figs., 21 pls. (incl. maps), 1925.
5. Thomas Leonard Watson: Science, new ser., vol. 61, pp. 225-226, February 27, 1925.
6. The geology and coal resources of the coal-bearing portion of Lee County, Virginia (abstract): Chicago Univ., Abstracts of Theses, Sci. Ser., vol. 1, pp. 277-283, October, 1925.
7. Virginia Geological Survey [activities]: Pan-Am. Geologist, vol. 44, no. 4, pp. 325-326, November, 1925.
8. The geology of Little North Mountain in northern Virginia and West Virginia: Jour. Geology, vol. 35, no. 1, pp. 32-57, 5 figs., January-February, 1927.
9. An oil seep in the folded Appalachians [Powell Valley, Lee County, Virginia]: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 7, pp. 757-763, 1 fig. (map), July, 1927.
10. The origin and occurrence in Rockbridge County, Virginia, of so-called "bentonite": Jour. Geology, vol. 35, no. 6, pp. 527-541, August-September, 1927.
11. Oil and gas possibilities of Virginia: Econ. Geology, vol. 22, no. 8, pp. 791-825, 7 figs., December, 1927.

Gill, Adam Capen.

1. Preliminary report on the chromite of Kenai Peninsula, Alaska: U. S. Geol. Survey, Bull. 712, pp. 99-129, 3 pls. (maps), 1919. Abstract by J. D. Sears, Washington Acad. Sci., Jour., vol. 10, no. 18, p. 522, November 4, 1920.
2. Chromite of Kenai Peninsula, Alaska: U. S. Geol. Survey, Bull. 742, 52 pp., 4 pls. (incl. maps), 1922.

Gill, J. E.

1. Gunflint iron-bearing formation, Ontario: Canada, Geol. Survey, Summ. Rept., 1924, pt. C, pp. 28-88, 1 fig., 4 pls. (incl. maps), 1926.
2. Origin of the Gunflint iron-bearing formation: Econ. Geology, vol. 22, no. 7, pp. 687-728, 6 figs., November, 1927.

Gilliatt, J. B.

1. Folding and faulting of the Wabana ore deposits: Canadian Inst. Min. and Met., Monthly Bull., no. 152, pp. 895-913, 10 figs., 3 pls., December, 1924; Trans., vol. 27, pp. 616-634 [1925].

Gillson, Joseph L.

1. (and Shannon, Earl V.). Szaibelyite from Lincoln County, Nevada: *Am. Mineralogist*, vol. 10, no. 6, pp. 137-139, June, 1925.
2. Zircon, a contact-metamorphic mineral in the Pend Oreille district, Idaho: *Am. Mineralogist*, vol. 10, no. 8, pp. 187-194, August, 1925.
3. Conichalcite from the Bristol mine, Lincoln County, Nevada: *Am. Mineralogist*, vol. 11, no. 5, pp. 109-114, May, 1926.
4. Optical notes on some minerals from the Mahopac iron mine, Brewster, New York: *Am. Mineralogist*, vol. 11, no. 10, pp. 281-286, October, 1926.
5. Pigeonite from the Triassic traps of the Connecticut Valley: *Am. Mineralogist*, vol. 11, no. 11, pp. 317-319, November, 1926.
6. Granodiorites in the Pend Oreille district of northern Idaho: *Jour. Geology*, vol. 35, no. 1, pp. 1-31, 3 figs., 3 pls., January-February, 1927.
7. Origin of the Vermont talc deposits, with a discussion on the formation of talc in general: *Econ. Geology*, vol. 22, no. 3, pp. 246-287, 7 figs., May, 1927.
8. The granite of Conway, New Hampshire, and its druse minerals: *Am. Mineralogist*, vol. 12, no. 8, pp. 307-319, 3 figs., August, 1927.
9. Biaxial calcite: *Am. Mineralogist*, vol. 12, no. 10, pp. 357-360, October, 1927.
10. (and Calahan, William H., and Millar, William B.). Adirondack studies; the age of certain Adirondack gabbros, and the origin of the reaction rims and peculiar border phases found in them: *Jour. Geology*, vol. 36, no. 2, pp. 149-163, 6 figs., February-March, 1928.
11. Horizontal versus vertical forces in crustal movements of the earth [report of address by Bailey Willis]: *Science*, new ser., vol. 67, pp. 608-610, June 15, 1928.
12. On the origin of the alkaline rocks: *Jour. Geology*, vol. 36, no. 5, pp. 471-474, July-August, 1928.

Gilluly, James. See also Bretz, 14; Mather, 12; Paige, 5.

1. (and Heald, K. C.). Stratigraphy of the El Dorado oil field, Arkansas, as determined by drill cuttings: *U. S. Geol. Survey, Bull.* 736, pp. 241-248, 1 pl., February 9, 1923.
2. (and Reeside, John B., jr.). Jurassic formations of eastern Utah (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 158-159, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, pp. 160-161, March, 1926.
3. Analcite diabase and related alkaline syenite from Utah: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 199-211, 1 fig., September, 1927.
4. (and Reeside, John B., jr.). Sedimentary rocks of the San Rafael Swell and some adjacent areas in eastern Utah: *U. S. Geol. Survey Prof. Paper* 150, pp. 61-110, 1 fig., 7 pls., February 15, 1928.
5. Basin Range faults in the Oquirrh Range, Utah (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 183, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, pp. 140-141, March, 1928.
6. Isostasy as a factor in Basin Range faulting in the Oquirrh Range, Utah (abstract): *Washington Acad. Sci., Jour.*, vol. 18, no. 9, pp. 263-264, May 4, 1928.
7. Basin range faulting along the Oquirrh Range, Utah: *Geol. Soc. America, Bull.*, vol. 39, no. 4, pp. 1103-1130, 6 figs., 2 pls., December 30, 1928.

Gilmore, Charles Whitney. See also Merriam, 27; Wade, B., 3.

1. A new restoration of *Triceratops*, with notes on the osteology of the genus: U. S. Nat. Mus., Proc., vol. 55, pp. 97-112, 7 pls., 6 figs., 1919.
2. New fossil turtles, with notes on two described species: U. S. Nat. Mus., Proc., vol. 56, pp. 113-132, 9 pls., 8 figs., 1919.
3. A mounted skeleton of *Dimetrodon gigas* in the United States National Museum with notes on the skeletal anatomy: U. S. Nat. Mus., Proc., vol. 56, pp. 525-539, 4 pls., 8 figs., 1919.
4. Reptilian faunas of the Torrejon, Puerco, and underlying Upper Cretaceous formations of San Juan County, New Mexico; U. S. Geol. Survey, Prof. Paper 119, 71 pp., 26 pls., 33 figs., 1919. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 10, no. 11, pp. 327-328, June 4, 1920.
5. An ornithomimid dinosaur in the Potomac of Maryland: Science, new ser., vol. 50, pp. 394-395, October 24, 1919.
6. Reptile reconstructions in the United States National Museum: Smithsonian Inst., Ann. Rept., 1918, pp. 271-280, 6 pls., 1920.
7. Osteology of the carnivorous Dinosauria in the United States National Museum, with special reference to the genera *Antrodemus* (*Allosaurus*) and *Ceratosaurus*: U. S. Nat. Mus., Bull. 110, 159 pp., 36 pls., 79 figs., 1920.
8. The fauna of the Arundel formation of Maryland: U. S. Nat. Mus., Proc., vol. 59, pp. 581-594, 5 pls., 1921.
9. A new horned dinosaur from Canada; the *Styracosaurus albertensis*, with a 6-foot skull bristling with horns: Sci. Am. Monthly, vol. 3, no. 1, pp. 7-8, 2 figs., January, 1921.
10. Remarks on some additions to the fossil vertebrate exhibition in the National Museum (abstract): Washington Acad. Sci., Jour., vol. 11, no. 3, p. 66, February 4, 1921.
11. An extinct sea lizard from western Kansas [*Tylosaurus proriger*]: Sci. Am., vol. 124, no. 14, pp. 273, 280, 3 figs., April 2, 1921.
12. Discovery of sauropod dinosaur remains in the Upper Cretaceous of New Mexico: Science, new ser., vol. 54, p. 274, September 23, 1921.
13. A new description of *Saniwa ensidens* Leidy, an extinct varanid lizard from Wyoming: U. S. Nat. Mus., Proc., vol. 60, art. 23, 28 pp., 22 figs., 3 pls., 1922.
14. The smallest known horned dinosaur, *Brachyceratops*: U. S. Nat. Mus., Proc. vol. 61, art. 3, 4 pp., 4 pls., 1922.
15. A new fossil turtle, *Kinosternon arizonense*, from Arizona: U. S. Nat. Mus., Proc., vol. 62, art. 5, 8 pp., 7 figs., 5 pls., 1922.
16. The horned dinosaurs: Smithsonian Inst., Ann. Rept., 1920, pp. 381-387, 8 pls., 1922.
17. A new sauropod dinosaur from the Ojo Alamo formation of New Mexico: Smithsonian Misc. Coll., vol. 72, no. 14, 9 pp., 2 pls., January 31, 1922.
18. A new species of *Corythosaurus* with notes on other Belly River Dinosauria: Canadian Field-Naturalist, vol. 37, no. 3, pp. 46-52, 1 fig., 5 pls., March, 1923.
19. A new species of *Aspideretes* from the Belly River Cretaceous of Alberta, Canada: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 17, sec. 4, pp. 1-11, 5 pls., May, 1923.
20. A new species of *Laosaurus*, an ornithischian dinosaur from the Cretaceous of Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 18, sec. 4, pp. 1-7, 2 pls., May, 1924.

Gilmore, Charles Whitney—Continued.

21. Contributions to vertebrate paleontology: A new coelurid dinosaur from the Belly River Cretaceous of Alberta; A new species of hadrosaurian dinosaur from the Edmonton formation (Cretaceous) of Alberta; On the genus *Stephanosaurus*, with a description of the type specimen of *Lambeosaurus lornbei* Parks; On the skull and skeleton of *Hypacrosaurus*, a helmet-crested dinosaur from the Edmonton Cretaceous of Alberta: Canada, Geol. Survey, Bull. no. 38, 89 pp., 17 figs., 12 pls., March 6, 1924.
22. On *Troodon validus*, an orthopodous dinosaur from the Belly River Cretaceous of Alberta, Canada: Alberta, Univ., Dept. Geology, Bull. no. 1, 43 pp., 3 figs., 15 pls., March 29, 1924.
23. The Dinosaur National Monument and its fossils (abstract): Washington Acad. Sci., Jour., vol. 19, no. 15, p. 381, September 19, 1924.
24. A nearly complete articulated skeleton of *Camarasaurus*, a saurischian dinosaur from the Dinosaur National Monument, Utah: Carnegie Mus., Mem., vol. 10, no. 3, pp. 347-384, 5 figs., 5 pls., July 10, 1925.
25. Osteology of ornithopodous dinosaurs from the Dinosaur National Monument, Utah: Carnegie Mus., Mem., vol. 10, no. 4, pp. 385-410, 8 figs., 1 pl., July 10, 1925.
26. Fossil footprints from the Grand Canyon: Smithsonian Misc. Coll., vol. 77, no. 9, 41 pp., 23 figs., 12 pls., January 30, 1926.
27. Fossil footprints from the Grand Canyon (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 240-241, March 30, 1926.
28. A new aetosaurian reptile from the Morrison formation of Utah: Carnegie Mus., Annals., vol. 16, no. 2, pp. 325-348, 4 figs., 3 pls., March, 1926.
29. On a nearly complete lizard skull from the Oligocene of Nebraska: Kansas, Univ., Sci. Bull., vol. 16, no. 6, pp. 229-231, 1 pl., March, 1926.
30. On fossil turtles from the Pleistocene of Florida: U. S. Nat. Mus., Proc., vol. 71, art. 15, 10 pp., 4 figs., 5 pls., 1927.
31. Footprints of unknown vertebrate animals in the Carboniferous and Permian of the Grand Canyon (abstract): Science, new ser., vol. 65, pp. 479-480, May 13, 1927.
32. Fossil footprints in the Grand Canyon (abstract): Washington Acad. Sci., Jour., vol. 7, no. 10, p. 272, May 19, 1927.
33. Fossil footprints from the Grand Canyon; second contribution: Smithsonian Misc. Coll., vol. 80, no. 3, 78 pp., 37 figs., 21 pls., July 30, 1927.
34. Note on a second occurrence of the mosasaurian reptile *Globidens*: Science, new ser., vol. 66, p. 452, November, 1927.
35. Fossil footprints from the Grand Canyon; third contribution: Smithsonian Misc. Coll., vol. 80, no. 8, 16 pp., 7 figs., 5 pls., January 28, 1928.
36. Fossil footprints in the Grand Canyon of the Colorado, Arizona: Smithsonian Inst., Explorations and Field Work in 1927, pp. 7-10, 3 figs., 1928. (Pub. 2957.)
37. (and Sturdevant, Glenn E.). Discovery of fossil tracks on the north rim of the Grand Canyon: Science, new ser., vol. 67, p. 216, February 24, 1928.
38. Fossil lizards of North America: Nat. Acad. Sci., Mem., vol. 22, 3d mem., 201 pp., 106 figs., 27 pls., 1928.
39. A new fossil reptile from the Triassic of New Jersey: U. S. Nat. Mus. Proc., vol. 73, art. 7, 8 pp., 3 figs., 3 pls., 1928.

Gilmore, Charles Whitney—Continued.

40. A new pterosaurian reptile from the marine Cretaceous of Oregon: U. S. Nat. Mus., Proc., vol. 73, art. 24, 5 pp., 2 figs., 1928.
41. Fossil footprints from the Fort Union (Paleocene) of Montana: U. S. Nat. Mus., Proc., vol. 74, art. 5, 4 pp., 3 pls., 1928.

Girty, George Herbert.

1. The Bend formation and its correlation (with discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 71-81, 1919.
2. (and Moore, Raymond C.). Age of the Bend series [Texas]: Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 418-420, 1919.
3. Carboniferous and Triassic faunas [of Utah]: U. S. Geol. Survey, Prof. Paper 111, pp. 641-648, 6 pls., 1920.
4. Observations on the faunas of the Greenbrier limestone and adjacent rocks: West Virginia Geol. Survey, Tucker County, pp. 450-488, 1923.
5. (and Roundy, P. V.). Notes on the Glenn formation of Oklahoma with consideration of new paleontologic evidence (with discussion by W. L. Goldston, jr.): Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 4, pp. 331-349, July-August, 1923.
6. On the genera *Cladochonus* and *Monilipora*: Jour. Geology, vol. 33, no. 1, pp. 19-27, January-February, 1925.
7. Mississippian formations of San Saba County, Texas: Geologic age and correlation; The macro-fauna of the limestone of Boone age: U. S. Geol. Survey, Prof. Paper 146, pp. 3-4, 24-43, 2 pls., 1926.
8. Faunas of the Pennsylvanian and Mississippian periods: West Virginia Geol. Survey, Mercer, Monroe, and Summers counties, pp. 847-860, 1926.
9. A new area of Carboniferous rocks in Mexico: Science, new ser., vol. 63, pp. 286-287, March 12, 1926.
10. Descriptions of new species of Carboniferous and Triassic fossils [from southeastern Idaho]: U. S. Geol. Survey, Prof. Paper 152, pp. 411-446, 7 pls., 1927.
11. The generic characters of *Astartella* Hall: Washington Acad. Sci., Jour., vol. 17, no. 16, pp. 417-423, 1 pl., October 4, 1927.
12. The Pocono fauna of the Broad Top coal field, Pennsylvania: U. S. Geol. Survey, Prof. Paper 150, pp. 111-127, 2 pls., February 17, 1928.
13. The generic name *Orbiculoidea* D'Orbigny and its application: Washington Acad. Sci., Jour., vol. 18, no. 5, pp. 128-142, March 4, 1928.
14. Characters of the brachiopod genus *Lingulidiscina* Whitfield: Washington Acad. Sci., Jour., vol. 18, no. 9, pp. 241-249, May 4, 1928.

Girvin, H. H.

1. Geology of the Onaman gold area [Ontario]: Canadian Min. Jour., vol. 45, no. 37, pp. 899-900, 1 fig., September 12, 1924.

Gleason, H. A.

1. The measurement of postglacial time: Science, new ser., vol. 52, p. 340, October 8, 1920.

Gledhill, Thomas Lloyd.

1. Iridosmine crystals from Ruby Creek, Atlin district, British Columbia: Toronto, Univ., Studies, Geol. Series, no. 12, pp. 40-42, 1 fig., 1921.
2. Geology along an eastward continuation of Niven's 4th base line: Ontario Dept. Mines, 33d Ann. Rept., vol. 33, pt. 6, pp. 18-39, 13 figs. (incl. map), 1925.

Gledhill, Thomas Lloyd—Continued.

3. Tashota-Onaman gold area, District of Thunder Bay: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 6, pp. 65-85, illus., map, 1925; Canadian Min. Jour., vol. 46, no. 38, pp. 884-885, September 18, 1925.
4. Lightning River gold area, District of Cochrane: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 6, pp. 86-98, illus., map, 1925; Canadian Min. Jour., vol. 47, no. 9, pp. 226-228, 1 fig., February 26, 1926.
5. Grassy River area, District of Sudbury: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 6, pp. 57-76, 11 figs., map, 1927.
6. Notes on the south part of the Grassy River area: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 6, pp. 77-82, 5 figs., 1927.
7. Michipicoten gold area, District of Algoma: Ontario Dept. Mines, 36th Ann. Rept., vol. 36, pt. 2, pp. 1-49, illus., maps, 1927.
8. Goudreau-Lochalsh gold area, District of Algoma: Ontario Dept. Mines, 36th Ann. Rept., vol. 36, pt. 2, pp. 51-86, illus., map, 1927.

Glenk, Robert.

1. Louisiana lignite: Louisiana, Dept. Conservation, Bull. no. 8, 65 pp., illus., map, March, 1921.

Glenn, Leonidas Chalmers. See also Texas, Attorney General.

1. Oil fields of Kentucky and Tennessee: Am. Inst. Min. and Met. Eng., Trans., vol. 65, pp. 122-139, 1921; Mining and Metallurgy, no. 157, sec. 1, p. 51 (abstract), sec. 5, 12 pp., January, 1920; discussion, no. 159, sec. 2, pp. 18-19, March, 1920; discussion by Wilbur A. Nelson and Stuart St. Clair, Am. Inst. Min. and Met. Eng. [Trans., preprint no. 988], pp. 9-14, 1920.
2. Some paleontological evidence on the age of the oil-bearing horizon at Burkburnett, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 2, pp. 154-158 (with discussion by R. C. Moore, p. 324), March-April, 1921.
3. Oil development and prospects in Tennessee: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, p. 100 (abstract), no. 2, pp. 168-172, March-April, 1921.
4. The geology and coals of Webster County: Kentucky Geol. Survey, Series Six, vol. 5, 249 pp., 31 figs., 1922.
5. The geology and coals of Webster County . . . : Kentucky Geol. Survey, ser. 6, vol. 5, 249 pp., 31 figs., map, 1922.
6. The northern Tennessee coal field, included in Anderson, Campbell, Claiborne, Fentress, Morgan, Overton, Pickett, Roane, and Scott counties: Tennessee, Dept. Education, Division of Geology (State Geol. Survey), Bull. 33-B, 478 pp., 28 figs., 13 pls., 1925.
7. A new meteorite from Baldwyn, Mississippi: Am. Jour. Sci., 5th ser., vol. 9, p. 488, June, 1925.
8. Geology and physiography of the Red River boundary between Texas and Oklahoma: Pan-Am. Geologist, vol. 43, no. 5, p. 365, June, 1925.
9. The geology of the proposed Great Smoky Mountains National Park: Tennessee Acad. Sci., Jour., vol. 1, no. 2, pp. 13-15, April, 1926.
10. (and Lee, Wallace). Preliminary map of the areal and structural geology of Union County, Kentucky; areal geology in reconnaissance by L. C. Glenn, structural geology by Wallace Lee: Kentucky Geol. Survey, Ser. 6, 1928. Scale 1:62,500.

Glenn, Leonidas Chalmers—Continued.

11. (and McFarlan, A. C.). Geological map of Butler County, Kentucky; Pennsylvanian by L. C. Glenn, Mississippian by A. C. McFarlan. Scale 1:62,500. Kentucky Geol. Survey, ser. 6, 1928.

Glenn, M. L. See Larsen, 4.

Glock, Waldo S. See also Trowbridge, 4.

1. The use of the terms flint and chert: Iowa Acad. Sci., Proc., vol. 27, pp. 167-173 [1922].
2. Deficiency of atmospheric dust in coal: Science, new ser., vol. 56, pp. 484-485, October 27, 1922.
3. Algae as limestone makers and climatic indicators: Am. Jour. Sci., 5th ser., vol. 6, pp. 377-408, November, 1923.
4. Has not geology a message for everybody?: Pan-Am. Geologist, vol. 43, no. 5, pp. 345-348, June, 1925.
5. The significance of red color in sediments: Am. Jour. Sci., 5th ser., vol. 14, pp. 155-156, August, 1927.
6. An analysis of erosional terms: Am. Jour. Sci., 5th ser., vol. 15, pp. 471-483, June, 1928.

Glover, Sheldon L. See also Patty, 2.

1. Geology of the clays of Washington: Washington, Univ., Bull., Eng. Exper. Sta., ser., Bull. no. 18, pp. 22-28, October, 1923.

Goddard, Pliny E.

1. The antiquity of man in America: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 26, no. 3, pp. 257-259, May-June, 1926.

Godde, H. A. See also Copp, 1.

1. Oil fields of Ventura County: California State Min. Bur., Summary of Operations California Oil Fields., vol. 10, no. 5, pp. 5-24, 4 pls. (maps), November, 1924.
2. (and Keyes, R. L.). Report on the northeastern flank of the Buena Vista Hills, Midway oil field, Kern County, California: California State Min. Bur., Summary of Operations California Oil Fields, vol. 12, no. 1, pp. 5-12, 1 fig. 3 pls., July, 1926.
3. (and Musser, E. H.). Development of the Maricopa shale production in the southeastern portion of Thirty-five anticline, Sunset oil field, Kern County, California: California State Min. Bur., Summary of Operations California Oil Fields, vol. 12, no. 11, pp. 5-16, 4 pls., May, 1927.
4. Miocene formations in the east side fields of Kern County: California, Dept. Nat. Res., Div. Mines and Mining, Summary of Operations California Oil Fields, vol. 14, no. 1, pp. 5-15, 1 pl., July, 1928.

Goldman, Marcus Isaac. See also Darton, 6, 8; Fath, 1; Hancock, 3, 4, 6; Howe, M. A., 4; Johnson, R. H., 5; Schultz, 1; Shaw, E. W., 6; Winchester, 3.

1. General character, mode of occurrence, and origin of glauconite (abstract): Washington Acad. Sci., Jour., vol. 9, no. 16, pp. 501-502, October 4, 1919.
2. Structure and oil and gas resources of the Osage Reservation, Oklahoma; T. 29 N., Rs. 11 and 12 E.: U. S. Geol. Survey, Bull. 686, pp. 329-352, 1 pl. (map), 3 figs., 1920.

Goldman, Marcus Isaac—Continued.

3. Structure and oil and gas resources of the Osage Reservation, Oklahoma; T. 20, R. 10 E.: U. S. Geol. Survey, Bull. 686, pp. 353-358, 1 pl. (map), 1920.
4. (and Robinson, Heath M.). Structure and oil and gas resources of the Osage Reservation, Oklahoma, T. 28 N., Rs. 11 and 12 E.: U. S. Geol. Survey, Bull. 686, pp. 359-394, 4 pls. (incl. maps), 2 figs., 1920.
5. Lithologic subsurface correlation in the "Bend" series of north-central Texas: U. S. Geol. Survey, Prof. Paper 129, pp. 1-22, 1 fig., 1 pl., 1921. Abstract, Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, p. 199, 1921.
6. Field description of sediments (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 24, March 31, 1921.
7. Association of glauconite with unconformities (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 25, March 31, 1921.
8. Lithology of the "Bend series" and contiguous formations of north-central Texas (abstract): Washington Acad. Sci., Jour., vol. 11, no. 17, pp. 425-426, October 19, 1921.
9. A schedule for the field description of sedimentary rocks: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 3, pp. 254-259, May-June, 1922.
10. Basal glauconite and phosphate beds: Science, new ser., vol. 56, pp. 171-173, August 11, 1922.
11. "Black shale" formation in and about Chesapeake Bay: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 2, pp. 195-201, March-April, 1924.
12. Petrography of salt dome cap rock: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, pp. 42-78, 33 figs., January-February, 1925; Geology of salt dome oil fields, pp. 50-86, 33 figs., 1926.
13. Testing and adjusting the binocular microscope and suggestions on the use of microscopes in general: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, pp. 175-179, 1 fig., January-February, 1925.
14. Petrography of Ordovician and Mississippian limestones at their contact in Texas (abstract): Pan-Am. Geologist, vol. 44, no. 1, p. 79, August, 1925.
15. (and Merwin, H. E.). Color chart of the committee on sedimentation of the National Research Council: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 6, pp. 1018-1019, September, 1925.
16. Petrology of the contact of the Ordovician Ellenburger limestone and the Mississippian limestone of Boone age in San Saba County, Texas: U. S. Geol. Survey, Prof. Paper 146, pp. 44-59, 27 pls., 1926.
17. Proportions of detrital organic calcareous constituents and their chemical alteration in a reef sand from the Bahamas: Carnegie Inst. Washington, Pub. no. 344 (Papers from the Department of Marine Biology of the Carnegie Institution of Washington, vol. 23), pp. 37-66, 1 fig., February, 1926.

Goldring, Winifred.

1. Decreasing salinity of the Pleistocene Champlain sea going southward, as shown by the character of the fauna, with a brief discussion of the Pleistocene fauna of the Hudson Valley and its significance (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 132-133, March 31, 1921.

Goldring, Winifred—Continued.

2. Annual rings of growth in Carboniferous wood: *Bot. Gazette*, vol. 72, no. 5, pp. 326–330, 1 pl., November, 1921.
3. The Champlain sea; evidence of its decreasing salinity southward as shown by the character of the fauna: *New York State Mus. Bull.*, nos. 239–240, pp. 153–194, 2 figs., 5 pls., 1922.
4. The Devonian crinoids of the State of New York: *New York State Mus. Memoir* 16, 670 pp., 63 figs., 60 pls., 1923.
5. The Upper Devonian forest of seed ferns in eastern New York: *New York State Mus. Bull.* no. 251, pp. 50–92, 7 figs., 11 pls., 1924.
6. New museum exhibits: The fossil forests of Gilboa; What is a fossil? What is a geological formation?: *New York State Mus. Bull.*, no. 267, pp. 81–84, 1 pl., 1926.
7. New Upper Devonian plant material [Gilboa, New York]: *New York State Mus. Bull.*, no. 267, pp. 85–87, 5 pls., 1926.
8. New species of Hamilton crinoids [Hamilton, New York]: *New York State Mus. Bull.*, no. 267, pp. 89–92, 1 fig., 2 pls., 1926.
9. The oldest known petrified forest [Gilboa, Schoharie County, New York]: *Sci. Monthly*, vol. 24, no. 6, pp. 515–529, 14 figs., June, 1927.

Goldschmidt, Victor.

1. (and Gordon, Samuel G.) Crystallographic tables for the determination of minerals: *Acad. Nat. Sci. Philadelphia, Spec. Pub.* no. 2, 70 pp., 4 figs., 1928.

Goldschmidt, Victor Moritz.

1. On the metasomatic processes in silicate rocks: *Econ. Geology*, vol. 17, no. 2, pp. 105–123, March–April, 1922.
2. Metasomatic processes in fissure veins (discussion): *Econ. Geology*, vol. 21, no. 1, pp. 91–94, January–February, 1926.
3. A physico-chemical theory of metasomatism (discussion): *Econ. Geology*, vol. 22, no. 5, pp. 521–523, August, 1927.

Goldston, W. L., jr. See also Girty, 5.

1. Differentiation of the Glenn formation in the U. S. G. S. Ardmore quadrangle. 3 sheets, maps and sections, *Oklahoma Geol. Survey* [1922].
2. Differentiation and structure of the Glenn formation: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, p. 105, January–February, 1921 (abstract), vol. 6, no. 1, pp. 5–23, 1 fig., 5 pls. (incl. maps), January–February, 1922.
3. Structure of the Glenn formation, Oklahoma: *Oil Engineering and Finance*, vol. 1, no. 15, pp. 481–483, April, 1922.

Goldthwait, James Walter. See also Antevs, 1.

1. Submergence and postglacial uplift in New Hampshire (abstract, with discussion by C. W. Brown): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 112–113, March 31, 1920.
2. Dispersion of stones in the drift in New Hampshire (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 130–131, March 31, 1920.
3. Survey of road materials in New Hampshire (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 154–155, March 31, 1920.
4. Glaciation of New Hampshire (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 86, March 31, 1922.
5. Physiography of Nova Scotia: *Canada, Geol. Survey, Mem.* 140, 179 pp., 18 figs., 28 pls. (incl. map), 1924.

Goldthwait, James Walter—Continued.

6. The geology of New Hampshire: New Hampshire Acad. Sci., Handbook no. 1, 86 pp., 22 figs., 27 pls., 2 maps, Concord, N. H., Rumford Press, 1925.
7. Late glacial oscillations of level in the St. Lawrence-Ottawa Valley (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 173-174, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 168, March, 1926.

Gonyer, Forest A. See Hewett, 21; Ross, C. S., 25; Shannon, 75, 76.

Goodier, B. D. See Franks, 1.

Goodrich, Harold Beach.

1. Petroleum geology—the past and the future: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 4, pp. 450-457, July-August, 1921.
2. Anthony F. Lucas; biographical notice: Am. Inst. Min. and Met. Eng., Trans., vol. 65, pp. 421-423, portr., 1921.

Goodrich, R. H. See Barton, 12.

Goodspeed, G. E.

1. Effects of inclusions in small porphyry dikes at Cornucopia, Oregon: Jour. Geology, vol. 35, no. 7, pp. 653-662, 4 figs., October-November, 1927.
2. (and Weymouth, A. A.). Mineral constituents and origin of a certain kaolin deposit near Spokane, Washington: Am. Ceramic Soc., Jour., vol. 11, no. 9, pp. 687-695, 4 figs., September, 1928.

Goodwin, L. H.

1. West Shiningtree gold district, Ontario: Eng. and Min. Jour., vol. 108, pp. 261-264, 4 figs., August 16, 1919.
2. The East Tintic district, Utah: Eng. and Min. Jour., vol. 109, pp. 79-81, 3 figs., January 10, 1920.

Goodwin, Ralph Talbot.

1. The organic content of oil shales: Colorado School of Mines, Quart., vol. 18, no. 1, Supplement A, 41 pp., 13 figs., January, 1923.

Goodwin, W. L.

1. Titaniferous iron ores in Canada: Canadian Min. Inst., Trans., vol. 22, pp. 86-99 [1920].
2. The outliers of Porcupine; a study of the eastward extension of the Porcupine gold field [Ontario]: Canadian Min. Jour., vol. 45, no. 14, pp. 324-326, 1 fig., April 4, 1924; Min. Mag., vol. 30, no. 5, pp. 310-312, 1 fig., May, 1924.
3. (and Corless, C. V.). Willet Green Miller: Canadian Min. Jour., vol. 46, no. 7, pp. 165-166, portr., February 13, 1925.

Goodwin, W. M.

1. Lake Fortune gold [northwestern Quebec]: Canadian Min. Jour., vol. 44, no. 40, pp. 776-779, 5 figs., October 5, 1923; Min. Mag., vol. 29, no. 5, pp. 303-305, 1 fig., November, 1923.
2. Developments in the Quebec gold belt: Canadian Inst. Min. and Met., Monthly Bull., no. 143, pp. 188-198, 3 figs., March, 1924.

Goranson, Roy W.

1. A correlation of the Mesozoic formations of the Pacific coast of North America: Am. Jour. Sci., 5th ser., vol. 8, pp. 61-78, July, pp. 159-182, August, 1924.

Goranson, Roy W.—Continued.

2. The determination of plagioclase feldspars: *Am. Mineralogist*, vol. 11, no. 6, pp. 139–154, 4 figs., June, 1926.
3. Calumet Island, Pontiac County, Quebec: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 105–124, 1 fig., map, 1927.
4. Aegirite from Libby, Montana: *Am. Mineralogist*, vol. 12, no. 1, pp. 37–39, January, 1927.
5. The density of the island of Hawaii, and density distribution in the earth's crust: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 89–120, 1 fig., August, 1928.

Gordon, C. C.

1. The Virgin Valley, Nevada, opal deposits: *Min. Rev.*, Salt Lake City, Utah, vol. 30, no. 6, pp. 7–8, June 30, 1928.

Gordon, Charles Henry.

1. Barite deposits in upper east Tennessee: Tennessee State Geol. Survey, Bull. 23 (Pt. 1, Ann. Rept. 1919), pp. 65–70, 1920.
2. Notes on the geology of the cove areas of east Tennessee (abstract): *Science*, new ser., vol. 51, pp. 492–493, May 14, 1920.
3. History, occurrence, and distribution of the marbles of east Tennessee: Tennessee, Dept. Education, Div. Geology, Bull. 28, pp. 15–86, 13 figs., 10 pls. (incl. maps), 1924.
4. Mica-peridotite dike in Union County, Tennessee (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 125–126, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 73, February, 1927.

Gordon, Clarence E. See also Foye, 5; Keith, 1.

1. Ancient rock deformations and their present expressions in western Vermont (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 88–89, March 31, 1921.
2. Studies in the geology of western Vermont: Vermont, State Geologist, Twelfth Rept., 1919–20, pp. 114–279, 13 figs., 17 pls., 1921.
3. The geology of western Vermont: *Science*, new ser., vol. 55, p. 208, February 24, 1922.
4. Studies in the geology of western Vermont (second paper): Vermont, State Geologist, Thirteenth Rept., 1921–22, pp. 143–285, 7 pls., 1923.
5. Studies in the geology of western Vermont (third paper): Vermont, State Geologist, Fourteenth Rept., 1923–24, pp. 218–259, 1924.
6. Notes on the geology of the townships of Bristol, Lincoln, and Warren: Vermont, State Geologist, 15th Rept., 1925–26, pp. 272–318, 1927.

Gordon, J. P.

1. The probabilities of a stable gold production from northern Manitoba: Canadian Inst. Min. and Met., Monthly Bull. no. 118, pp. 168–173, February, 1922.

Gordon, Samuel G. See also Goldschmidt, V., 1; Merwin, 6.

1. Two American occurrences of epidessmine: *Am. Mineralogist*, vol. 5, no. 9, p. 167, September, 1920.
2. The dufrenite locality at Midvale, Rockbridge County, Virginia: *Am. Mineralogist*, vol. 5, no. 12, pp. 197–198, December, 1920.
3. Ordovician basalts and quartz diabases in Lebanon County, Pennsylvania: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 72, pt. 3, pp. 354–357, 5 figs., 1921.
4. Desilicated granitic pegmatites: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 73, pt. 1, pp. 169–192, 13 figs., 1921.

Gordon, Samuel G.—Continued.

5. Texas, Lancaster County, Pennsylvania: *Am. Mineralogist*, vol. 6, no. 7, pp. 113-117, July, 1921.
6. The mineralogy of Pennsylvania: *Acad. Nat. Sci. Philadelphia*, Special Pub. no. 1, 255 pp., 110 figs., 1 pl., 1922.
7. The chromite deposits of the State line serpentines [Pennsylvania-Maryland]: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 73, pt. 3, pp. 449-454, 4 figs., 1922.
8. Corundum Hill (Franklin), Macon County, North Carolina: *Am. Mineralogist*, vol. 7, no. 11, pp. 189-190, November, 1922.
9. Crystallographic notes on glaucochroite, willemite, celestite, and calcite from Franklin, New Jersey: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 74, pp. 105-112, 7 figs., 1923.
10. Crystallographic notes on wavellite from Bolivia, Pennsylvania, Arkansas, and Bohemia: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 74, pp. 113-119, 4 figs., 1923.
11. A correction: recently described crystals of glaucochroite from Franklin, New Jersey, are tephroite: *Am. Mineralogist*, vol. 8, no. 2, pp. 33-34, February, 1923.
12. Recently described "bisbeeite" from the Grand Canyon is cyanotrichite: *Am. Mineralogist*, vol. 8, no. 5, pp. 92-93, May, 1923.
13. Optical notes on thomsonite: *Am. Mineralogist*, vol. 8, no. 7, pp. 125-127, July, 1923.
14. Crystallographic notes on hodgkinsonite, datolite, and calciothomsonite from Franklin, New Jersey: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 75, pp. 271-274, 2 figs., 1924.
15. The composition of thomsonite: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 76, pp. 103-107, 1 fig., 1924.
16. Minerals obtained in Greenland on the second Academy-Vaux expedition, 1923: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 76, pp. 249-268, 3 figs., 2 pls., 1924.
17. Mineralogical notes, 1-10: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 77, pp. 1-13, 5 figs., 1926.
18. Penroseite and trudellite; two new minerals: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 77, pp. 317-324, 1926.
19. Mining cryolite in Greenland: *Eng. and Min. Jour.-Press*, vol. 121, no. 6, pp. 236-240, 3 figs., February 6, 1926.
20. On arfvedsonite, riebeckite, and crocidolite from Greenland: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 79, pp. 193-205, 4 figs., 1928.
21. The probable identity of gageite with tephroite: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 79, pp. 207-208, 1928.
22. Memorial of George Vaux, jr.: *Am. Mineralogist*, vol. 13, no. 3, pp. 97-101, portr., March, 1928.
23. Calcite from the French Creek iron mines, Chester County, Pennsylvania: *Festschrift Victor Goldschmidt*, pp. 108-116, 5 figs., Heidelberg, Carl Winters Universitätsbuchhandlung, 1928.

Gore, F. D.

1. Oil shale in Santa Barbara County, California: *California State Min. Bur., Mining in California*, vol. 19, no. 4, pp. 211-224, 5 figs., 2 pls. (maps), September, 1923.
2. Oil shale in Santa Barbara County, California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 4, pp. 459-472, 5 figs., July-August, 1924.

Gossner, B.

1. The crystal form of boleite: *Am. Mineralogist*, vol. 13, no. 12, pp. 580-582, December, 1928.

Goudge, M. F.

1. Magnesium sulphate in British Columbia: Canada, Dept. Mines, Mines Branch, *Investigations of Mineral Resources* . . . 1924, pp. 62-80, 1 fig., 1926.
2. Sodium carbonate in British Columbia: Canada, Dept. Mines, Mines Branch, *Investigations of Mineral Resources* . . . 1924, pp. 81-102, 1 fig., 3 pls., 1926.
3. Preliminary report on the limestones of Quebec and Ontario: Canada, Dept. Mines, Mines Branch, 75 pp., 3 figs., 16 pls., 1927. (Pub. no. 682.)

Goudkoff, Paul P.

1. Correlative value of the microlithology and micropaleontology of the oil-bearing formations in the Sunset-Midway and Kern River oil fields: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 5, pp. 482-494, 4 figs., May, 1926.

Gouin, Frank.

1. Oil and gas in Oklahoma; the geology of the oil and gas fields of Stephens County, Oklahoma: Oklahoma Geol. Survey, Bull. no. 40-E, 52 pp., 1 fig., 6 pls. (incl. map), October, 1926.
2. Geology of Beckham County: Oklahoma Geol. Survey, Bull. no. 40-M, 17 pp., 2 figs., 2 pls. (incl. maps), May, 1927.
3. Oil and gas in Oklahoma; geology of Comanche County: Oklahoma Geol. Survey, Bul. no. 40-DD, 25 pp., 1 fig., 2 pls., June, 1928.

Gould, Charles Newton. See also Aurin, 3.

1. Preliminary notes on the geology and structure of the Amarillo region [Texas]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 4, no. 3, pp. 269-275, 1920.
2. *Platanus occidentalis*: Oklahoma, Univ., Bull. (Proc. Oklahoma Acad. Sci., 1910-1920), new ser. no. 220, pp. 40-43, July 15, 1921.
3. Crystalline rocks of the plains (with discussion by R. S. Knappen): *Geol. Soc. America, Bull.*, vol. 34, no. 3, pp. 541-560, 3 figs., September 30, 1923.
4. Buried mountain ranges in Oklahoma: Oklahoma Acad. Sci., Proc., vol. 3 (Oklahoma, Univ., Bull., new ser. no. 271), pp. 123-125, October 1, 1923.
5. A new classification of the Permian red beds of southwestern Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 3, pp. 322-341, 1 fig. (map), May-June, 1924.
6. Oklahoma's hidden treasures: *The South's Development, Manufacturers Record*, vol. 86, no. 24, pt. 2, pp. 403-407, 7 figs., December 11, 1924.
7. Geology in Mid-Continent operations [oil fields of Oklahoma]: *Oil and Gas Jour.*, vol. 23, no. 36, pp. 192, 224, January 29, 1925.
8. Recent studies on the Permian of the Plains (abstract): *Pan-Am. Geologist*, vol. 45, no. 3, pp. 247-248, April, 1925.
9. Index to the stratigraphy of Oklahoma; with lists of characteristic fossils by Charles E. Decker: Oklahoma Geol. Survey, Bull. no. 35, 115 pp., chart, September, 1925.

Gould, Charles Newton—Continued.

10. The correlation of the Permian of Kansas, Oklahoma, and northern Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 2, pp. 144-153, 1 fig. (map), February, 1926.
11. (and Lonsdale, John T.). Geology of Texas County, Oklahoma: *Oklahoma Geol. Survey, Bull. no. 37*, 62 pp., 6 figs., 9 pls., map, April, 1926.
12. Carboniferous rocks of Oklahoma (abstract): *Pan-Am. Geologist*, vol. 45, no. 3, pp. 248-249, April, 1926.
13. Carbonic rocks of north central Texas (abstract): *Pan-Am. Geologist*, vol. 45, no. 3, pp. 250-251, April, 1926.
14. Our present knowledge of the Permian of the Great Plains: *Jour. Geology*, vol. 34, no. 5, pp. 415-421, July-August, 1926.
15. (and Lonsdale, John T.). Geology of Beaver County, Oklahoma: *Oklahoma Geol. Survey, Bull. no. 38*, 71 pp., 17 figs., map, August, 1926.
16. (and Lewis, Frank E.). The Permian of western Oklahoma and the Panhandle of Texas: *Oklahoma Geol. Survey, Circular no. 13*, 29 pp., 2 pls. (maps), December, 1926.
17. Oklahoma Survey, seventh field conference: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 12, pp. 1306-1308, December, 1926.
18. Oklahoma Geological Survey; eighth field conference, November 9-17, 1926: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 1, pp. 90-91, January, 1927.
19. The upper Paleozoic rocks of Oklahoma; stratigraphy and areal geology: *Oklahoma Geol. Survey, Bull. no. 41*, pp. 5-21, map, January, 1927.
20. Unsolved geological problems in Oklahoma in 1925: *Oklahoma Acad. Sci., Proc.*, vol. 5, 1925 (*Oklahoma, Univ., Bull., new ser., no. 330, Univ. Studies no. 22*), pp. 136-140, April 1, 1926.
21. Geology and oil fields of the Mid-Continent area: *Oklahoma Acad. Sci., Proc.*, vol. 5, 1925 (*Oklahoma, Univ., Bull., new ser., no. 330, Univ. Studies no. 22*), pp. 142-145, April 1, 1926.
22. Celestite, a new mineral for Oklahoma: *Oklahoma Acad. Sci., Proc.*, vol. 5, 1925 (*Oklahoma, Univ., Bull., new ser., no. 330, Univ. Studies no. 22*), pp. 145-147, April 1, 1926.
23. Notes on the extension of the Blaine gypsum in Oklahoma, Kansas, and Texas (abstract): *Oklahoma Acad. Sci., Proc.*, vol. 5, 1925 (*Oklahoma, Univ., Bull., new ser., no. 330, Univ. Studies no. 22*), 151-152, April 1, 1926.
24. Dead ones, or obsolete formation names in Oklahoma: *Oklahoma Acad. Sci., Proc.*, vol. 6, pt. 2, 1926 (*Oklahoma, Univ., Bull., new ser., no. 348*), pp. 234-238, January 1, 1927.
25. Radiate structure of sand barite crystal masses: *Oklahoma Acad. Sci., Proc.*, vol. 6, pt. 2, 1926 (*Oklahoma, Univ., Bull., new ser., no. 348*), pp. 239-242, January 1, 1927.
26. New leaf fossils from the Permian of central Oklahoma: *Oklahoma Acad. Sci., Proc.*, vol. 6, pt. 2, 1926 (*Oklahoma, Univ., Bull., new ser., no. 348*), pp. 263-264, January 1, 1927.
27. (and Willis, Robin). Tentative correlation of the Permian formations of the southern Great Plains: *Geol. Soc. America, Bull.*, vol. 38, no. 3, pp. 431-442, 2 figs., September 30, 1927; abstract, no. 1, p. 139, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, pp. 79-80, February, 1927.

Gould, Charles Newton—Continued.

28. Fossil footprints near Abilene, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 6, pp. 633-634, June, 1927.
29. Gypsum and salt: My Oklahoma, vol. 1, no. 8, pp. 22, 50, 55, November, 1927.
30. My friend *Glyptodon* and his pals: My Oklahoma, vol. 1, no. 8, pp. 32-33, 36, 52, 5 figs., November, 1927.
31. Oklahoma, the geologists' laboratory: Oklahoma Geol. Survey, Circ. no. 16, 16 pp., 6 figs., December, 1927.
32. Deep-well temperatures in Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 7, pp. 765-766, July, 1928.
33. Humanizing geology: Sci. Monthly, vol. 27, no. 5, pp. 416-423, 10 figs., November, 1928.

Gould, Laurence McKinley.

1. Petrography of some Sierra la Sal dikes [eastern Utah] (abstract): Pan-Am. Geologist, vol. 44, no. 2, p. 158, September, 1925.
2. The rôle of orogenic stresses in laccolithic intrusions: Am. Jour. Sci., 5th ser., vol. 12, pp. 119-129, 4 figs., August, 1926.
3. A "laccolite in the air" [La Sal Mountains, Utah]: Michigan Acad. Sci., Papers, vol. 5, pp. 253-256, 1 fig., 1926; abstract, Pan-Am. Geologist, vol. 44, no. 2, p. 160, September, 1925.
4. The geology of La Sal Mountains of Utah: Michigan Acad. Sci., Papers, vol. 7, pp. 55-106, 7 figs., 8 pls., 1927.
5. Terraces of the Holstensborg district, Greenland (abstract): Geol. Soc. American, Bull., vol. 38, no. 1, pp. 139-140, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 80; February, 1927.
6. The Putnam Baffin Island expedition; report on the physical geography: Geog. Rev., vol. 18, no. 1, pp. 27-40, map (of Foxe Land), January, 1928.
7. Geological results of Putnam Baffin Island expedition (abstract): Pan-Am. Geologist, vol. 49, no. 2, p. 149, March, 1928; Geol. Soc. America, Bull., vol. 39, no. 1, p. 220, March 30, 1928.
8. Contributions to the geology of Foxe Land, Baffin Island; Part I. The rocks and their distribution: Michigan, Univ., Mus. Paleontology, Contr., vol. 3, no. 3, pp. 19-24, 2 figs., 2 pls., November 10, 1928.

Gow, James Ellis.

1. (and Tilton, John L.). Geology of Adair County: Iowa Geol. Survey, vol. 27, pp. 277-344, 3 figs., 1 pl., map [1920].

Grabau, Amadeus William.

1. Migration of geosynclines (abstract): Geol. Soc. America, Bull., vol. 30, p. 87, March 31, 1919.
2. Conditions of deposition of some Tertiary petroliferous sediments (abstract): Geol. Soc. America, Bull., vol. 30, pp. 103-104, March 31, 1919.
3. Prevailing stratigraphic relationships of the bedded phosphate deposits of Europe, north Africa, and North America (abstract): Geol. Soc. America, Bull., vol. 30, p. 104, March 31, 1919.
4. Relation of the Holochoanites and the Orthochoanites to the Protochoanites and the significance of the Bactritidae (abstract, with discussion): Geol. Soc. American, Bull., vol. 30, pp. 148-149, March 31, 1919.

Grabau, Amadeus William—Continued.

5. Inclusion of the Pleistocene period in the Psychozoic era (abstract, with discussion): *Geol. Soc. America, Bull.*, vol. 30, pp. 149-150, March 31, 1919.
6. Significance of the Sherburne sandstone in upper Devonian stratigraphy: *Geol. Soc. America, Bull.*, vol. 30, no. 4, pp. 423-470, 2 figs., December 31, 1919.
7. Significance of the middle Siluric in American and European geology (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 138, March 31, 1920.
8. Unicline; a term proposed for monoclinial ridges of erosion (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 153, March 31, 1920.
9. Geology of the nonmetallic mineral deposits other than silicates; vol. I, Principles of salt deposition. 435 pp., 125 figs., New York, McGraw Hill Book Company, 1920.
10. Sixty years of Darwinism: *Natural History*, vol. 20, no. 1, pp. 59-72, 6 figs. January-February 1920.
11. The Niagara cuesta from a new viewpoint: *Geog. Rev.* vol. 9 no. 4, pp. 264-276, 17 figs., April-June, 1920.
12. A textbook of geology. [2 vols.] Part I, General geology; Part II, Historical geology. 864, 976 pp., 1980 figs., Boston, D. C. Heath & Co., 1920-21.
13. Principles of stratigraphy. 2d ed., 1185 pp., 264 figs., New York, A. G. Seiler, 1924.
14. Use of the term "Sinian" (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 175, March 30, 1925.

Gradenwitz, Alfred.

1. Searching the interior of the earth's crust: *Eng. and Min. Jour.-Press*, vol. 118, no. 2, pp. 54-56, 3 figs., July 12, 1924.

Graeber, Charles K. See Honess, 3, 4.

Graham, Hoyt.

1. Effect of electrolytes and hydrogenian concentration of sedimentation of Pleistocene clays (abstract): *Pan-Am. Geologist*, vol. 48, no. 5, pp. 377-378, December, 1927.

Graham, Richard Percival Devereux. See also Ferrier, 2.

1. On ferrierite, a new zeolitic mineral from British Columbia; with notes on some other Canadian minerals: *Roy. Soc. Canada, Trans.*, 3d ser., vol. 12, sec. 4, pp. 185-201, 1 pl., 5 figs., 1919.
2. Mines and mineral deposits of Canada: *Canadian Inst. Min. and Met., Monthly Bull.* no. 151, pp. 715-830, 2 pls. (maps), November, 1924; *Trans.*, vol. 27, pp. 19-134, 2 pls. (maps), [1925]; *Canadian Min. Jour.*, vol. 45, nos. 35 and 36, pp. 845-849, 878-881, 3 figs., August 29 and September 5, 1924.
3. Mines and mineral deposits of Canada: *Inst. Min. and Met. Bull.* no. 248, 98 pp., 2 pls. (maps), May, 1925; discussion, no. 249, pp. 21-28, June, 1925; *Trans.*, vol. 34, pt. 2, pp. 251-355, 2 pls. (maps), 1925.
4. Pseudomorphs after spinel from Bathurst, Lanark County, Ontario (abstract): *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 21, p. xcv, 1927.

Graham, William A. P.

1. Experiments on the origin of phosphate deposits: *Econ. Geology*, vol. 20, no. 4, pp. 319-334, 1 fig., June-July, 1925.

Graham, William A. P.—Continued.

2. Notes on hornblende; variations in the chemical composition of hornblende from different types of igneous rocks: *Am. Mineralogist*, vol. 11, no. 5, pp. 118–123, 3 figs., May, 1926.

Granger, Walter. See also Matthew, 16.

1. (and Simpson, George Gaylord). Multituberculates in the Wasatch formation: *Am. Mus. Novitates*, no. 312, 4 pp., 2 figs., May 14, 1928.

Grant, Ulysses Sherman. See also Miller, B. L., 9.

1. Possible horizons for oil and gas in northeastern Illinois: *Illinois State Acad. Sci., Trans.*, vol. 15, pp. 389–392 [1923].
2. The age of the earth: *Jour. Geography*, vol. 24, no. 7, pp. 276–279, October, 1925.

Grant, U. S., IV. See Cushman, 34.

Grant, Wilbur H.

1. Résumé of geology of United Comstock Mines [Sierra Nevada, Washoe mining district, Storey County, Nevada]: *Mining and Metallurgy*, no. 191, pp. 39–41, November, 1922.

Grant, William M. See Hanna, 27.

Graser, F. A.

1. Recent developments in the Huntington Beach oil field: *California State Min. Bur., Summary of Operations California Oil Fields*, vol. 12, no. 12, pp. 5–16, 7 pls., June, 1927.

Grasty, John Sharshall, 1880–1930.

1. Types of deposits of manganese-bearing material in Virginia: *Am. Manganese Producers Assoc., Proc. 1st Ann. Convention*, pp. 97–107, Washington, 1928.

Graton, Louis Caryl. See also Bateman, 13; Bowie, 13; Hewett, 11.

1. (and Davidson, S. C.). Microscopical interpretation of folded structures: *Econ. Geology*, vol. 23, no. 2, pp. 158–184, 3 figs., March–April, 1928.
2. Underground photography without flash light: *Econ. Geology*, vol. 22, no. 4, pp. 388–399, June–July, 1927.

Grawe, Oliver Rudolph.

1. *Septaria* from the Pennsylvania shale [St. Louis, Mo.]: *Washington Univ. Studies*, vol. 11, no. 1, pp. 65–69, 1 pl., July, 1923.
2. Some breccias of the St. Louis formation in the St. Louis, Missouri, region: *Washington Univ. Studies*, vol. 13, Sci. ser., no. 1, pp. 45–62, 6 pls., 1925.
3. Quantitative determination of rock color: *Science*, new ser., vol. 66, pp. 61–62, July 15, 1927.
4. A table for the identification of Nevada's common minerals, with notes on their occurrence and use: *Nevada, Univ., Bull.*, vol. 22, no. 1, 13 pp., table, February 15, 1928.
5. The mineralogy of dumortierite; megascopic mineralogy; bibliography: *Nevada, Univ., Bull.*, vol. 22, no. 2 (Mackay School of Mines, Bull. on Dumortierite), pp. 7–21, 27–30, 45–47, March 15, 1928.

Gray, Francis William.

1. Coast erosion of the coal measures in the Sydney coal field, Cape Breton: *Canadian Min. Jour.*, vol. 41, pp. 433–437, 9 figs., May 28, 1920.

Gray, Francis William—Continued.

2. Canada's coal supply: Canadian Min. Inst., Monthly Bull. no. 97, pp. 406-415, May, 1920; Trans., vol. 23, pp. 297-307 [1921].
3. Mining coal under the sea in Nova Scotia, with notes on comparable undersea coal-mining operations elsewhere: Canadian Min. and Met., Bull. no. 182, pp. 638-758, 18 figs. (incl. maps), June, no. 188, pp. 1433-1494, December, 1927; Canadian Inst. Min. and Met., Trans., vol. 30, pp. 986-1176, 18 figs. (incl. maps) [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc., pt. 2, pp. 1-191, 18 figs. (incl. maps), 1928.

Gray, John P.

1. (and others). Horace Vaughan Winchell: Mining and Metallurgy, vol. 4, no. 201, pp. 463-464, portr., September, 1923.

Green, Frederick E.

1. Vicissitudes of silver mining at Newburyport, Massachusetts: Eng. and Min. Jour.-Press, vol. 115, no. 11, pp. 483-484, March 17, 1923.

Green, W. F.

1. Geology of base line running west from near mile 19, western boundary of the Nipigon forest reserve: Ontario Dept. Mines, 32d Ann. Rept., vol. 32, pt. 3, 1923, pp. 1-7, 4 pls., 1924.

Greene, Frank Cook. See also Sawyer, 1; White, L. H., 1.

1. Oklahoma's stratigraphic problem: Oil and Gas Jour., vol. 18, no. 49, pp. 54 and 56, May 7, 1920.
2. Preliminary sketch of the history of the lower Missouri: Geol. Soc. America, Bull., vol. 32, no. 1, pp. 83-87, March 31, 1921.
3. Origin of oil in northern Mid-Continent [field]: Oil and Gas Jour., vol. 21, no. 51, pp. 18, 111, 112, May 17, 1923.
4. Are there "red beds" of Chester age in the Mid-Continent region?: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 6, pp. 696-697, November-December, 1923.
5. Granite wells in the northern Mid-Continent region: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 351-354, March-April, 1925.
6. Geology of the Stonewall quadrangle, Oklahoma; Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, p. 355, March-April, 1925.
7. Various types of granite form largest group in Mid-Continent: Oil and Gas Jour., vol. 24, no. 22, pp. 69, 133, October 22, 1925.
8. (and Pond, W. F.). The geology of Vernon County: Missouri Bur. Geology and Mines, 2d ser., vol. 19, 152 pp., 14 figs., 14 pls. (incl. map), 1926.
9. Oil and gas in Oklahoma; Subsurface stratigraphy of western Oklahoma: Oklahoma Geol. Survey, Bull. 40-D, 14 pp., 1 fig., map, September, 1926; Bull. 40, vol. 1, pp. 41-50, 1 fig., map, July, 1928.
10. Oil and gas in Oklahoma; geology of Pawnee County [the Morrison field, Pawnee County, Oklahoma, pp. 21-28, by Everett Carpenter]: Oklahoma Geol. Survey, Bull. no. 40-CC, 28 pp., 8 figs., 3 pls., February, 1928.

Greenland, Cyril Walter. See also Bruce, 14.

1. Note on the optical fluorite from Madoc, Ontario: Am. Mineralogist, vol. 5, no. 12, p. 211, December, 1920.

Greer, L. See Wallace, 18.

Greger, Darling K.

1. The Devonian of central Missouri (II): *Am. Jour. Sci.*, 4th ser., vol. 49, pp. 265-266, April, 1920.
2. The Devonian of central Missouri (III); the Cooper limestone: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 20-24, 1 fig., July, 1920.
3. North American species of the brachiopod *Etheridgina*: *Geol. Mag.*, vol. 57, pp. 535-538, 1 pl., December, 1920.

Gregory, Herbert Ernest.

1. Professor [Henry Shaler] Williams at Yale: *Science*, new ser., vol. 49 pp. 63-65, January 17, 1919.
2. Co-operation in advanced geologic instruction: *Am. Jour. Sci.*, 4th ser., vol. 47, pp. 281-286, April, 1919. Abstract, *Geol. Soc. America, Bull.*, vol. 31, p. 94, March 31, 1919.
3. Geology in the Students' Army Training Corps (abstract): *Geol. Soc. America, Bull.*, vol. 30, pp. 81-82, March 31, 1919.
4. Teaching of geology as related to research: *Geol. Soc. America, Bull.*, vol. 31, no. 3, pp. 357-361, September 30, 1920.
5. Ninth biennial report of the Geological and Natural History Survey of Connecticut: *Connecticut State Geol. and Nat. Hist. Survey, Bull.* no. 32, 18 pp., 1920.
6. History of geology: *Sci. Monthly*, vol. 12, no. 2, pp. 97-126, February, 1921.
7. Geology. In *The development of the sciences*, edited by L. L. Woodruff, pp. 169-213, 5 pls. (portraits), New Haven, Yale University Press, 1923.
8. Geologic relations [of the granites of Connecticut]: *U. S. Geol. Survey, Bull.* 738, pp. 355-361, 1 pl. (map), 1923.
9. (and Noble, Levi F.). Notes on a geological traverse from Mohave, California, to the mouth of San Juan River, Utah: *Am. Jour. Sci.*, 5th ser., vol. 5, 229-238, March, 1923.
10. Memorial of Joseph Barrell: *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 18-28, portr., March 30, 1923.
11. Glaciation of Mauna Kea (abstract): *Third Pan-Pacific Sci. Cong., Tokyo*, 1926, *Proc.*, p. 1833, 1928.

Gregory, John Walter.

1. Magmatic ores: *Canadian Min. Jour.*, vol. 46, no. 28, pp. 665-668, July 10, 1925; *Faraday Soc., Trans.*, vol. 20, no. 60, pp. 449-458, April, 1925.
2. Movements of the continents (abstract): *Pan-Am. Geologist*, vol. 44, no. 4, pp. 333-334, November, 1925.
3. The Sudbury nickel ores: *Geol. Mag.*, vol. 63, pp. 190-192, April, 1926.
4. (and Barrett, B. H.). The stratigraphical position of the Keewatin: *Jour. Geology*, vol. 35, no. 2, pp. 141-149, February-March, 1927.
5. (and Barrett, B. H.). The major terms of the pre-Paleozoic: *Jour. Geology*, vol. 35, no. 8, pp. 734-742, November-December, 1927.
6. Wegener's hypothesis. In *Theory of continental drift*, pp. 93-96, *Am. Assoc. Petroleum Geologists*, 1928.
7. Present Scottish usage of term drift: *Pan-Am. Geologist*, vol. 50, no. 5, pp. 375-376, December, 1928.

Gregory, William King. See also Williston, 1.

1. The evolution of the human face: *Natural History*, vol. 19, nos. 4-5, pp. 421-425, 9 figs., April-May, 1919.
2. On the structure and relationships of *Notharctus*, an American Eocene primate: *Am. Mus. Nat. Hist., Mem.*, new ser., vol. 3, pt. 2, pp. 49-243, 84 figs., 37 pls., September, 1920.

Gregory, William King—Continued.

3. Studies in comparative myology and osteology, No. IV; A review of the evolution of the lachrymal bone of vertebrates with special reference to that of mammals: Am. Mus., Nat. Hist., Bull., vol. 42, pp. 95-263, 194 figs., 1 pl., 1920.
4. Studies in comparative myology and osteology, No. V; On the anatomy of the preorbital fossæ of Equidæ and other ungulates: Am. Mus. Nat. Hist., Bull., vol. 42, pp. 265-283, 25 figs., 1 pl., 1920.
5. Restoration of *Camarasaurus* and life model: Nat. Acad. Sci., Proc., vol. 6, no. 1, pp. 16-17, January 15, 1920.
6. The origin and evolution of the human dentition. 548 pp., 353 figs., Baltimore, Williams & Wilkins Company, 1922.
7. (and Hellman, Milo). Notes on the type of *Hesperopithecus haroldcookii* Osborn: Am. Mus. Novitates, no. 53, 16 pp., 6 figs., January 6, 1923.
8. A Jurassic fish fauna from western Cuba, with an arrangement of the families of holostean ganoid fishes: Am. Mus. Nat. Hist., Bull., vol. 48, pp. 223-242, 5 figs., 1 pl., 1923.
9. (and Miner, R. W., and Noble, G. K.). The carpus of *Eryops* and the structure of the primitive chiropterygium: Am. Mus. Nat. Hist., Bull., vol. 48, pp. 279-288, 4 figs., 1923.
10. Further notes on the molars of *Hesperopithecus* and *Pithecanthropus*: Am. Mus. Nat. Hist., Bull., vol. 48, pp. 509-526, 13 figs., 1923.
11. A fossil ganoid fish (*Lepidotus (?) lacotanus*, new species) from the Lower Cretaceous of South Dakota: Am. Mus. Novitates, no. 134, 8 pp., 2 figs., October 10, 1924.
12. (and Hellman, Milo). Dentition of *Dryopithecus* and the origin of man (abstract): Pan-Am. Geologist, vol. 42, no. 4, pp. 307-308, November, 1924.
13. The family tree of man: Am. Mus. Nat. Hist., Guide Leaflet series no. 52, pp. 36-48, illus., May, 1925.
14. (and Hellman, Milo). The dentition of *Dryopithecus* and the origin of man: Am. Mus. Nat. Hist., Anthropological Papers, vol. 28, pt. 1, pp. 1-123, 32 figs., 25 pls., 1926.
15. Paleontology of the human dentition; structural stages in the evolution of the cheek teeth: Am. Jour. Phys. Anthropology, vol. 9, no. 4, pp. 401-426, 8 figs., October-December, 1926.
16. The origin of man from the anthropoid stem—when and where?: Am. Philos. Soc., Proc., vol. 66, pp. 439-463, 5 figs., 1 pl., 1927.
17. Two views of the origin of man: Science, new ser., vol. 65, pp. 601-605, June 24, 1927.
18. *Hesperopithecus* apparently not an ape nor a man: Science, new ser., vol. 66, pp. 579-581, December 16, 1927.
19. (and Cook, Harold, J.). New material for the study of evolution; a series of primitive rhinoceros skulls (*Trigonias*) from the lower Oligocene of Colorado: Colorado Mus. Nat. Hist., Proc., vol. 8, no. 1, pp. 1-32, 5 figs., 6 pls., February 1, 1928; abstract, Geol. Soc. America, Bull., vol. 38, no. 1, p. 235, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 3, pp. 239-240, April, 1927.
20. Did man originate in central Asia?: Sci. Monthly, vol. 24, no. 5, pp. 385-401, 14 figs., May, 1927.
21. (and Kellogg, Remington). A fossil porpoise from California: Am. Mus. Novitates, no. 269, 7 pp., 3 figs., May 20, 1927.
22. Were the ancestors of man primitive brachiators?: Am. Philos. Soc. Proc., vol. 77, no. 2, pp. 129-150, 5 figs., 4 pls., 1928.

Gregory, William King—Continued.

23. Dawn-man or ape? was our ancestor a dawn-man, or did we descend directly from an anthropoid ape of an ancient geologic epoch?: Sci. Am., vol. 137, no. 3, pp. 230-232, 8 figs., September, 1927.
24. The upright posture of man; a review of its origin and evolution: Am. Philos. Soc., Proc., vol. 67, no. 4, pp. 339-374, 15 figs., 2 pls., 1928.
25. The lineage of man. In *Creation by evolution*, edited by Frances Mason, pp. 270-292, New York, The Macmillan Company, 1928.

Gregory, Winifred.

1. Supplement to the bibliography of Minnesota mining and geology: Minnesota, Univ., School of Mines Exp. Station, Bull. no. 8, 43 pp., November 24, 1920.

Greig, J. W.

1. Immiscibility in silicate melts (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 124, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 158, March, 1924.
2. Woman and Narrow lakes area, District of Kenora (Patricia portion): Ontario Dept. Mines, 36th Ann. Rept., vol. 36, pt. 3, pp. 85-110, 6 figs., map, 1928.
3. On the evidence which has been presented for liquid silicate immiscibility in the laboratory and in the rocks of Agate Point, Ontario: Am. Jour. Sci., 5th ser., vol. 15, pp. 375-402, 10 figs., May, 1928.

Gress, E. M.

1. An annotated list of fossil plants of the Dakota formation (Cretaceous) in the collections at the Carnegie Museum, including descriptions of three new species: Carnegie Mus., Annals, vol. 13, nos. 3-4, pp. 274-332, 2 pls., March, 1922.

Grider, Richard L.

1. Determining dip and strike graphically: Eng. and Min. Jour., vol. 123, no. 24, pp. 969-970, 2 figs., June 11, 1927.

Grier, Norman McDowell.

1. New forms of *Calamites* [from East Bellevue, Pennsylvania]: Am. Midland Naturalist, vol. 5, no. 6, pp. 147-150, 3 pls., November, 1917.
2. The fossil flora of the vicinity of Cold Spring Harbor [Long Island, New York]: Am. Midland Naturalist, vol. 9, no. 10, pp. 513-527, July, 1925.
3. The geology of Long Island with especial reference to the Cold Spring Harbor region and its flora: Am. Midland Naturalist, vol. 9, no. 11, pp. 531-563, 1 fig., September, 1925.
4. The Hitchcock lecture upon ichnology, and the Dartmouth college ichnological collection: Am. Midland Naturalist, Notre Dame, Indiana, vol. 10, no. 7, pp. 161-197, January, 1927; abstract, Geol. Soc. America, Bull., vol. 38, no. 1, pp. 234-235, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 3, p. 239, April, 1927.

Griffin, Judson R. See Savage, 18.

Griggs, Robert Fiske.

1. The character of the eruption [of Katmai] as indicated by its effects on nearby vegetation: Ohio Jour. Sci., vol. 19, no. 3, pp. 173-209, 19 figs., January, 1919.
2. The Katmai National Monument and the Valley of Ten Thousand Smokes: Science, new ser., vol. 49, pp. 236-237, March 7, 1919.

Griggs, Robert Fiske—Continued.

3. The great Mageik landslide [Katmai district, Alaska]: *Ohio Jour. Sci.*, vol. 20, no. 8, pp. 325-354, 17 figs., June, 1920.
4. A program for the study of the volcanoes of the Aleutian region: *Pan-Pacific Scientific Conference, First, Proc.*, Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, pp. 356-358, 1921.
5. Our greatest national monument [Katmai National Monument, Alaska]: *Nat. Geog. Mag.*, vol. 40, no. 3, pp. 219-292, illus., September, 1921.
6. The Valley of Ten Thousand Smokes [Alaska]. 340 pp., 16 pls., 217 figs., 9 maps, Washington, The National Geographic Society, 1922.
7. Observations on the incandescent sand flow of the Valley of Ten Thousand Smokes: *K. Akad. Wetensch. Amsterdam, Proc. Sec. Sci.*, vol. 25, pp. 42-50, 5 figs., March, 1923.
8. The cause of earthquakes: *Nat. Geog. Mag.*, vol. 44, no. 4, pp. 443-452, 1 fig., 2 pls., October, 1923.

Grim, Ralph E.

1. Recent oil and gas prospecting in Mississippi with a brief study of sub-surface geology: *Mississippi State Geol. Survey, Bull.* no. 21, 98 pp., 4 figs., 1928.
2. Preliminary report on bentonite in Mississippi: *Mississippi Geol. Survey, Bull.* no. 22, 14 pp., 5 figs., January, 1928. [mimeographed].

Grimes, John Alden.

1. Some suggestions concerning ore genesis: *Mining and Metallurgy*, vol. 9, pp. 532-536, December, 1928.

Grimm, M. W.

1. (and Howe, Henry V.). New Waskom gas field of Louisiana and Texas: *Pan-Am. Geologist*, vol. 43, no. 5, pp. 333-335, 1 pl. (map), June, 1925.

Grinnell, George Bird.

1. An old-time bone hunt; an account of the expedition undertaken by Prof. O. C. Marsh in 1870 to the then wild West: *Natural History*, vol. 23, no. 4, pp. 329-336, 2 figs., July-August, 1923.

Griswold, W. R.

1. Chemistry of ore solutions: *Eng. and Min. Jour.*, vol. 122, no. 6, p. 224, August 7, 1926.

Grizzle, M. A.

1. Geochemical relationship of waters encountered in the Huntington Beach field: *California State Min. Bur., Summary of Operations California Oil Fields*, vol. 9, no. 6, pp. 17-28, December, 1923.

Grout, Frank Fitch. See also Tanton, 17.

1. Clays and shales of Minnesota; with contributions by E. K. Soper: *U. S. Geol. Survey, Bull.* 678, 259 pp., 16 pls., 38 figs., 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 9, no. 19, p. 600, November 19, 1919.
2. (and Soper, E. K.). *Geology of Minnesota*: *U. S. Geol. Survey, Bull.* 678, pp. 70-105, 2 pls. (incl. map), 3 figs., 1919.
3. (and Broderick, T. M.). The magnetite deposits of the eastern Mesab range, Minnesota: *Minnesota Geol. Survey, Bull.* no. 17, 58 pp., 18 pls. (incl. maps), 9 figs., 1919.

Grout, Frank Fitch—Continued.

4. (and Broderick, T. M.). Organic structures in the Biwabik iron-bearing formation of the Huronian in Minnesota: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 199–205, 4 figs., September, 1919.
5. The nature and origin of the Biwabik iron-bearing formation of the Mesabi range, Minnesota: *Econ. Geology*, vol. 14, no. 6, pp. 452–464, 2 pls., 1 fig., September–October, 1919.
6. Movements in crystallizing magma: *Jour. Geology*, vol. 28, no. 3, pp. 255–264, April–May, 1920.
7. Origin of east Mesabi magnetic ores: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 337–339, May, 1922.
8. Graphic study of igneous rock series: *Geol. Soc. America, Bull.*, vol. 33, no. 3, pp. 617–638, 4 figs., September 30, 1922.
9. Magnetite pegmatites of northern Minnesota (with discussion by W. J. Miller): *Econ. Geology*, vol. 18, no. 3, pp. 253–269, 4 figs., April–May, 1923.
10. Occurrences of ladder veins in Minnesota: *Econ. Geology*, vol. 18, no. 5, pp. 494–505, 1 fig., August, 1923.
11. The relation of texture and composition of clays: *Am. Ceramic Soc., Jour.*, vol. 7, no. 2, pp. 122–140, February, 1924.
12. Notes on biotite: *Am. Mineralogist*, vol. 9, no. 8, pp. 159–165, 1 fig., August, 1924.
13. (and Thiel, George A.). Notes on stilpnomelane: *Am. Mineralogist*, vol. 9, no. 11, pp. 228–231, 1 fig., November, 1924.
14. (and Conhaim, H. J.). The rate of secondary enrichment by acid waters: *Econ. Geology*, vol. 20, no. 3, pp. 289–291, May, 1925.
15. Couthiching problem (with discussion by Andrew C. Lawson): *Geol. Soc. America, Bull.*, vol. 36, no. 2, pp. 351–364, 9 figs., June 30, 1925; abstract, no. 1, p. 160, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, pp. 153–154, March, 1925.
16. Relation of texture and composition of clays: *Geol. Soc. America, Bull.*, vol. 36, no. 2 pp. 393–415, 2 figs., June 30, 1925.
17. A peculiar shonkinite related to granite: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 472–480, 5 figs., June, 1925.
18. The Vermilion batholith of Minnesota: *Jour. Geology*, vol. 33, no. 5, pp. 467–487, 11 figs., July–August, 1925.
19. A magnetite segregation in banded syenite in Minnesota: *Econ. Geology*, vol. 20, no. 5, pp. 424–430, 4 figs., August, 1925.
20. The geology and magnetite deposits of northern St. Louis County, Minnesota: *Minnesota Geol. Survey, Bull.* no. 21, 220 pp., 16 figs., 12 pls., maps, 1926.
21. The use of calculations in petrology; a study for students: *Jour. Geology*, vol. 34, no. 6, pp. 512–558, 11 figs., August–September, 1926.
22. (and Schwartz, G. M.). Changes in the geologic map of northeastern Minnesota (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 115, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, pp. 67–68, February, 1927.
23. (and Schwartz, G. M.). Rove slate area in Minnesota (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 115, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 68, February, 1927.
24. Fundamental problems of the batholiths and methods for their attack: *Jour. Geology*, vol. 35, no. 4, pp. 311–318, 1 fig., May–June, 1927.

Grout, Frank Fitch—Continued.

25. (and Schwartz, G. M.). An alunitic gold ore in the Black Hills [South Dakota]: *Econ. Geology*, vol. 22, no. 4, pp. 369-373, 3 figs., June-July, 1927.
26. Anorthosite and granite as differentiates of a diabase sill on Pigeon Point, Minnesota (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 167, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, pp. 75-76, February, 1928.
27. Anorthosite and granite as differentiates of a diabase sill on Pigeon Point, Minnesota: *Geol. Soc. America, Bull.*, vol. 39, no. 2, pp. 555-577, June, 1928.

Groves, James.

1. Fossil charophyte fruits from Texas: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 12-14, 3 figs., July, 1925.

Gruner, John Walter.

1. Geologic reconnaissance of the southern part of the Taos Range, New Mexico: *Jour. Geology*, vol. 28, no. 8, pp. 731-742, 1 pl. (map), 4 figs., November-December, 1920.
2. Paragenesis of the martite ore bodies and magnetites of the Mesabi range [Minnesota]: *Econ. Geology*, vol. 17, no. 1, pp. 1-14, 3 figs., 2 pls., January-February, 1922.
3. Organic matter and the origin of the Biwabik iron-bearing formation of the Mesabi range: *Econ. Geology*, vol. 17, no. 6, pp. 407-460, 5 figs., 3 pls., September, 1922.
4. Algae, believed to be Archean: *Jour. Geology*, vol. 31, no. 2, pp. 146-148, 3 figs., February-March, 1923.
5. Contributions to the geology of the Mesabi range, with special reference to the magnetites of the iron-bearing formation west of Mesaba [Minnesota]: *Minnesota Geol. Survey, Bull.* 19, 71 pp., 17 figs., 13 pls., 1924.
6. Discovery of life in the Archean: *Jour. Geology*, vol. 33, no. 2, pp. 151-152, 3 figs., February-March, 1925.
7. Silicification of erosion surfaces (discussion): *Econ. Geology*, vol. 21, no. 1, pp. 97-98, January-February, 1926.
8. Magnetite-martite-hematite: *Econ. Geology*, vol. 21, no. 4, pp. 375-393, 3 figs., 1 pl., June-July, 1926.
9. The Soudan formation and a new suggestion as to the origin of the Vermilion iron ores: *Econ. Geology*, vol. 21, no. 7, pp. 629-644, 6 figs., November, 1926.
10. Changes in the oxidation of iron in magnetite; two kinds of magnetite (discussion): *Econ. Geology*, vol. 22, no. 7, pp. 744-749, November, 1927.
11. The oscillation method of X-ray analysis of crystals: *Am. Mineralogist*, vol. 13, no. 4, pp. 123-141, 12 figs., April, 1928.
12. The use of the oscillation method in determining the structure of analcite: *Am. Mineralogist*, vol. 13, no. 5, pp. 174-194, 11 figs., May, 1928.
13. The chemical formula of boracite: *Am. Mineralogist*, vol. 13, no. 9, pp. 481-483, September, 1928.

Grunsky, C. E.

1. A contribution to the climatology of the ice age: *California Acad. Sci. Proc.*, 4th ser., vol. 16, no. 2, pp. 53-85, 4 figs., 1 pl., January 31, 1927.

Guck, Homer.

1. Geology of the Michigan copper district: Eng. and Min. Jour., vol. 108, pp. 948-949, December 27, 1919.

Guerard, Albert.

1. Eric Knight Jordan: Science, new ser., vol. 63, p. 327, March 26, 1926.

Guernsey, T. D.

1. Quartz sand and clay deposits, Melford, Cape Breton: Canada, Geol. Survey, Summ. Rept., 1926, pt. C, pp. 110-124, 2 figs., 1927.
2. The geology of North Mountain, Cape Breton [Nova Scotia]: Canada, Geol. Survey, Summ. Rept., 1927, pt. C, pp. 47-82, map, 1928.

Guild, Frank Nelson. See also Fairbanks, 12.

1. Flagstaffite, a new mineral from Arizona: Am. Mineralogist, vol. 5, no. 10, pp. 169-172, 2 figs., October, 1920.
2. The identity of flagstaffite and terpin hydrate: Am. Mineralogist, vol. 6, no. 9, pp. 133-135, September, 1921.
3. Wulfenite from Lavic, California: Am. Mineralogist, vol. 6, no. 12, pp. 167-168, 2 figs., December, 1921.
4. Flagstaffite, a new Arizona mineral and its identity with terpin hydrate (abstract): Science, new ser., vol. 55, p. 543, May 19, 1922.
5. Bornite as a furnace product: Am. Mineralogist, vol. 9, no. 10, pp. 201-205, October, 1924.
6. Some microscopic features of the silver minerals: Festschrift Victor Goldschmidt, pp. 135-142, 8 figs., Heidelberg, Carl Winters Universitätsbuchhandlung, 1928.

Gunning, H. C.

1. Syenite porphyry of Boischatel Township, Quebec: Canada, Survey, Bull. no. 46, pp. 31-41, 3 pls., 1927. [Pub. 2125.]

Gunter, Herman. See also Sellards, 12.

1. Administrative report; statistics of mineral production in Florida during 1918: Florida State Geol. Survey, 13th Ann. Rept., pp. 5-24, 25-32, 1921.
2. Administrative report; mineral production in Florida during 1919; statistics on mineral production in Florida during 1920; Florida State Geol. Survey, 14th Ann. Rept., 1921-22, pp. 5-32, 1922.
3. (and Cooke, M. K.). Geology of Florida and a résumé of the drilling for oil: National Petroleum News, vol. 14, no. 21, pp. 67-68, 71-72, 2 figs. (incl. map), May 22, 1922.
4. Comanchan backbone of Florida: Pan-Am. Geologist, vol. 39, no. 1, pp. 66-67, February, 1923.
5. Administrative report; statistics on mineral production in Florida during 1921 and 1922: Florida State Geol. Survey, 15th Ann. Rept., 1922-1923, pp. 5-23, 1924.
6. Mineral resources of Florida: The South's Development, Manufacturers Record, vol. 86, no. 24, pt. 2, pp. 363-366, 9 figs., December 11, 1924.
7. Administrative report; statistics of mineral production in Florida during 1923: Florida State Geol. Survey, 16th Ann. Rept., pp. 7-25, 1 pl., 1925.
8. Statistics of mineral production in Florida during 1924: Florida State Geol. Survey, 17th Ann. Rept., pp. 11-19, 1926.
9. Administrative report; statistics of mineral production in Florida during 1925: Florida State Geol. Survey, 18th Ann. Rept., pp. 5-25, 1927.

Gunter, Herman—Continued.

10. Administrative report; statistics of mineral production in Florida during 1926: Florida State Geol. Survey, 19th Ann. Rept., pp. 13-31, 1928.
11. (and Martens, J. H. C.). Geology of Florida (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 272-273, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 3, p. 234, April, 1928.
12. Basement rocks encountered in a well in Florida: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 11, pp. 1107-1108, November, 1928.

Guppy, Henry Brougham.

1. Fossil botany in the western world; an appreciation: Am. Jour. Sci., 4th ser., vol. 49, pp. 372-374, May, 1920.
2. America's contribution to the study of the plant world: Jour. Ecology, vol. 9, no. 1, pp. 90-94, September 30, 1921.

Gurwitsch, Leo.

1. The chemical and the geological question of the origin of petroleum: Oil Field Engineering, vol. 2, no. 5, pp. 59-63, September, 1927.

Haack, Wilhelm.

1. Ueber eine marine Permfauna aus Nordmexiko nebst Bemerkungen über Devon daselbst: Deutsche geol. Gesell., Zeitschr., Bd. 66, H. 4, pp. 482-504, 2 figs., 2 pls., 1914.

Haanel, Benjamin F.

1. Facts about peat: Canada, Mines Branch, 48 pp., 1924.
2. Final report of the peat committee. . . .; peat, its manufacture and uses Canada, Dept. Mines, Mines Branch, no. 641, 298 pp., 46 figs., 58 pls., 1926.

Haanel, Eugene, 1841-1927.

1. Summary report of the Mines Branch of the Department of Mines [of Canada] for the calendar year ending December 31, 1918. 225 pp., 6 figs., Ottawa, 1920.
2. Summary report of the Mines Branch of the Department of Mines [of Canada] for the calendar year ending December 31, 1919. 182 pp., 2 figs., Ottawa, 1920.

Haas, William H.

1. Erosion features of the Mesa Verde [Colorado]: Illinois Acad. Sci., Trans. vol. 9, pp. 211-219 [1917].
2. Formation of clay balls: Jour. Geology, vol. 35, no. 2, pp. 150-157, 5 figs., February-March, 1927.

Haase, Leo G.

1. Little geological studies in southern California (author's illustrated notes on geological formations in southern California). 24 pp., illus., Long Beach, California, 1926.

Habermeyer, George Conrad.

1. Public ground-water supplies in Illinois: Illinois State Water Survey Bull. no. 21, 710 pp., 11 figs. and pls., 1925.

Hackford, J. E.

1. Nature of coal: Mining and Metallurgy, no. 163, pp. 35-36, July, 1921 (abstract); Am. Inst. Min. and Met. Eng., Trans. vol. 65, pp. 217-228, 1921 [preprint no. 1001], 6 pp., 1920; discussion by W. Pratt, David White, E. De Golyer, Reinhardt Thiessen, and C. Waters [preprint] no. 1038, pp. 63-68, January, 1921.

Hafer, Claude.

1. Placer gold in Indiana: *Eng. and Min. Jour.*, vol. 111, no. 25, p. 1023, June 18, 1921.

Hagens, Graddus R.

1. Mineral resources of Natrona County, Wyoming: *Min. Jour.*, Phoenix, Ariz., vol. 11, no. 15, pp. 3-6, 52-53, December 30, 1927.

Hager, Dilworth S.

1. (and Brown, I. O.). The Minerva oil field, Milam County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 5, pp. 632-640, 3 figs., September-October, 1924.
2. (and Stiles, S.). The Blue Ridge salt dome, Fort Bend County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 2, pp. 304-316, 4 figs., March-April, 1925; *Geology of salt dome oil fields*, pp. 600-612, 4 figs., 1926.
3. Factors affecting the color of sedimentary rocks: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 9, pp. 901-938, September, 1928.

Hager, Dorsey.

1. Practical oil geology; the application of geology to oil field problems. Third edition, 253 pp., 126 figs., New York, McGraw-Hill Book Company, 1919.
2. Geology of oil fields of north central Texas (with discussion by W. E. Pratt): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 61, pp. 520-531, 8 figs., 1920.
3. Oil possibilities of the Holbrook area in northeast Arizona. 31 pp., 8 figs. [private publication, copyright 1921]. *Mining and Oil Bulletin*, vol. 8, no. 1, pp. 23-26, 33-34; no. 2, pp. 71-74, 81, 94; no. 3, pp. 135-140, 12 figs., January, February, and March, 1922.
4. The Holbrook area, Arizona: *Min. and Oil Bull.*, vol. 8, no. 9, p. 523, September, 1922.
5. Sunburst oil and gas field, Montana (with discussion by F. G. Clapp): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 69, pp. 1101-1120, 5 figs., 1923; [preprint], no. 1218, 19 pp., 5 figs., February, 1923; abstract *Mining and Metallurgy*, vol. 4, no. 194, pp. 84-85, 1 fig., February 1923.
6. Stratigraphy, northeast Arizona, southeast Utah: *Min. and Oil Bull.*, vol. 10, no. 2, pp. 135, 137, 139, 167, 1 fig., February, no. 4, pp. 383, 385, 423, 439, 2 figs., April, 1924.
7. Oil possibilities in western Washington: *Oil and Gas Jour.*, vol. 23, no. 13-A, pp. 32, 112-113, 2 figs., August 21, 1924.
8. Practical oil geology . . . Fourth edition, 309 pp., 161 figs., New York, McGraw-Hill Book Company, 1926.
9. Meteor Crater [Arizona]: *Eng. and Min. Jour.-Press*, vol. 121, no. 9, p. 374, February 27, 1926.

Hager, Lee. See Brokaw, 1.

Haggen, E. A.

1. Geology of the Pend Oreille formations [Pend Oreille district, northeastern Washington]: *Min. and Industrial Record* (Vancouver, British Columbia), vol. 31, no. 4, pp. 82-83, April, 1928; *Min. Mag.*, vol. 38, no. 6, pp. 384-385, June, 1928.

Hake, Benjamin F.

1. Occurrence of *Pholadomya* in the Miocene of California (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 214, March 30, 1926.
2. Scarps of the southwestern Sierra Nevada, California: Geol. Soc. America, Bull., vol. 39, no. 4, pp. 1017-1030, 1 fig., 1 pl., December 30, 1928; abstract, Geol. Soc. America, Bull., vol. 38, no. 1, p. 164, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 158, March, 1927.

Haley, Charles Scott.

1. Dry placers of southern California: California State Min. Bur., Mining in California, vol. 18, no. 7, pp. 321-324, July, 1922; Pacific Min. News, vol. 1, no. 8, pp. 235-236, December, 1922.
2. Tertiary sluice robbers: California State Min. Bur., Mining in California, vol. 18, no. 10, pp. 550-553, October, 1922.
3. Gold placers of California: California State Min. Bur., Bull. 92, 167 pp., 36 figs., 7 pls., June, 1923.
4. Primary and secondary gold concentrations: California State Min. Bur., Mining in California, vol. 19, no. 1, pp. 38-40, January, 1923; Mining and Metallurgy, vol. 4, no. 203, p. 564, November, 1923.

Haley, D. F.

1. Molybdenite operations at Climax, Colorado; Am. Inst. Min. and Met. Eng., Trans., vol. 61, pp. 71-76, 1920.

Haliburton, E. D.

1. Newfoundland's coal areas: Canadian Min. Jour., vol. 40, no. 50, pp. 946-947, 1 fig., December 17, 1919.

Hall, C. W.

1. Geology of the Yoquivo, Chihuahua, mining district [Mexico]; Am. Inst. Min. and Met. Eng., Trans. [preprint], no. 1530, 15 pp., 5 figs. February, 1926; Trans., vol. 74, pp. 223-237, 5 figs., 1926; abstract, Mining and Metallurgy, vol. 7, no. 230, p. 77, February, 1926.

Hall, D. A. See Locke, 4.

Hall, George M. See also Swartz, C. K., 5.

1. Species of the mammalian subfamily Bassariscinae: California, Univ. Dept. Geol. Sci., Bull., vol. 16, no. 11, pp. 435-448, 2 figs., 1 pl. March 17, 1927.

Hall, George M. See also Swartz, C. K., 5.

1. Extinction of the Tetracoralla: Pan-Am. Geologist, vol. 37, no. 4, pp. 322-327, May, 1922.
2. Description of fire clay localities [in Maryland]: Maryland Geol. Survey, vol. 11, pp. 349-375, 1922.
3. Ground water in the Ordovician rocks near Woodstock, Virginia: U. S. Geol. Survey, Water-Supply Paper 596, pp. 45-66, 4 figs., 2 pls. August 22, 1927.
4. Note on an ebb and flow spring near Rogersville, Tennessee: Tennessee Acad. Sci., Jour., vol. 3, pp. 3-9, 3 figs., July, 1928.

Hall, Roy H. See Barwick, 1.

Hallimond, A. F.

1. Studies in the mica group (a discussion): Am. Mineralogist, vol. 12, no. 11, pp. 413-414, November, 1927.
2. Studies in the mica group (discussion): Am. Mineralogist, vol. 13, no. 1, pp. 451-452, August, 1928.

Hallimond, A. F.—Continued.

3. The formula of glauconite: *Am. Mineralogist*, vol. 13, no. 12, pp. 589–590, December, 1928.

Hamilton, Fletcher.

1. Report XVII of the State mineralogist; mining in California during 1920. 562 pp., 62 figs., 9 pls., California State Min. Bur., 1921.
2. California's mineral resources and the State Mining Bureau: California State Min. Bur., *Mining in California*, vol. 18, no. 11, pp. 618–627, November, 1922.

Hamilton, George H.

1. Continent formation and legend of Atlantis: *Pan-Am. Geologist*, vol. 50, no. 1, pp. 23–28, August, 1928.

Hamilton, S. Harbert. See Fettke, 6.

Hamilton, Walter Raleigh.

1. Development of petroleum geology in California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 4, pp. 457–460, July–August, 1921.

Hamlin, Homer.

1. Report on geological examination of Iron Canyon dam and reservoir site. In Report on Iron Canyon Project, California, by Homer J. Gault and W. F. McClure: U. S. Reclamation Service in cooperation with the State of California and the Iron Canyon Project Association, pp. 41–59, 9 pls., Washington, Government Printing Office, 1921.

Hammer, A. A.

1. (and Lloyd, A. M.). A study of some Upper Cretaceous sedimentation and diastrophism in Montana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 5, pp. 886–903, 1 fig., 2 pls., August, 1925.
2. (and Lloyd, A. M.). Notes on the Quadrant formation of east-central Montana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 10, pp. 986–996, 2 pls. (incl. maps), October, 1926.

Hammill, Chester A. See also Aurin, 2.

1. The Cretaceous of northwestern Louisiana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 2, pp. 298–310, 3 figs., March–April, 1921.

Hance, James Harold.

1. Work of the Illinois State Geological Survey: *Illinois State Acad. Sci., Trans.*, vol. 14, pp. 207–212 [1922].
2. Some questions in general and petroleum geology which are suggested by oil occurrences in Crawford County, Pennsylvanian beds; *Illinois State Acad. Sci., Trans.*, vol. 17, pp. 199–203, 1925.
3. Geology and mineral resources of the Wellsville quadrangle, Ohio (abstract): *Chicago, Univ., Abstracts of Theses, Sci. Ser.*, vol. 1, pp. 285–288, October, 1925.

Hancock, Eugene Thomas. See also Redwood, 1.

1. Geology and oil and gas prospects of the Lake Basin field, Montana (U. S. Geol. Survey, *Bull.* 691, pp. 101–147, 1918) (abstract by R. W. Stone): *Washington Acad. Sci., Jour.*, vol. 9, no. 2, p. 50, January 19, 1919.
2. Geology and oil and gas prospects of the Huntley field, Montana: U. S. Geol. Survey, *Bull.* 711, pp. 105–148, 5 pls. (incl. map), 2 figs., 1920. Abstract by J. D. Sears, *Washington Acad. Sci., Jour.*, vol. 10, no. 18, p. 521, November 4, 1920.

Hancock, Eugene Thomas—Continued.

3. The Upton-Thornton oil field, Wyoming: U. S. Geol. Survey, Bull. 716, pp. 17-34, 1 pl. (map), 1 fig., 1920. Abstract by M. I. Goldman, Washington Acad. Sci., Jour., vol. 10, no. 18, pp. 522-523, November 4, 1920.
4. The Mule Creek oil field, Wyoming: U. S. Geol. Survey, Bull. 716, pp. 35-53, 1 fig., 1 pl. (map), July 27, 1920. Abstract by M. I. Goldman, Washington Acad. Sci., Jour., vol. 10, no. 21, p. 598, December 19, 1920.
5. The Lance Creek oil and gas field, Niobrara County, Wyoming: U. S. Geol. Survey, Bull. 716, pp. 91-122, 4 pls. (incl. map), December 13, 1920; abstract by M. I. Goldman, Washington Acad. Sci., Jour., vol. 11, no. 10, p. 237, May 19, 1921.
6. The New Salem lignite field, Morton County, North Dakota: U. S. Geol. Survey, Bull. 726, pp. 1-39, 4 figs., 5 pls. (incl. map), May 6, 1921. Abstract by M. I. Goldman, Washington Acad. Sci., Jour., vol. 12, no. 1, p. 19, January 4, 1922.
7. Geology and coal resources of the Axial and Monument Butte quadrangles, Moffat County, Colorado: U. S. Geol. Survey, Bull. 757, 134 pp., 6 figs., 19 pls., 1925.

Handlirsch, Anton.

1. Revision der paläozoischen Insekten: Akad. Wissensch. Wien, Math.-naturw. Klasse, Denkschr., Band 96, pp. 511-592, 91 figs., 1919.

Handy, F. M.

1. Stevens County magnesite [Washington]. In Northwest Mines Handbook, vol. 1, pp. 315-318, 1 fig., published by Sidney Norman, Spokane, Washington, 1918.

Haney, James A.

1. The Kantishna mining district, Alaska: Min. and Sci. Press, vol. 122, pp. 881-882, 1 fig., June 25, 1921.

Haney, Marshall.

1. The tin deposits of Virginia, U. S. A.: Canadian Min. Jour., vol. 41, p. 801, October 1, 1920.
2. The mining of paint; yellow ocher deposits of the Cartersville district, Georgia: Eng. and Min. Jour., vol. 110, no. 18, pp. 859-860, 2 figs., October 30, 1920.
3. Petroleum: Sci. Monthly, vol. 17, no. 6, pp. 548-562, December, 1923.
4. The tin deposits of the Carolinas: Eng. and Min. Jour., vol. 126, no. 26, pp. 1023-1024, December 29, 1928.

Hanna, G. Dallas. See also Anderson, F. M., 1; Gaylord, 2; Taff, 4, 6; Takahashi, 1; Weaver, 3.

1. Geological notes on the Pribilof Islands, Alaska, with an account of the fossil diatoms: Am. Jour. Sci., 4th ser., vol. 48, pp. 216-224, September, 1919.
2. Fossil mollusks from the John Day Basin in Oregon: Oregon, Univ., Pub., vol. 1, no. 6, 8 pp., 1 pl., August, 1920.
3. [Report of] Department of Invertebrate Paleontology: California Acad. Sci., Proc., 4th ser., vol. 9, nos. 14 and 15, pp. 387-389, 1920.
4. Miocene land shells from Oregon: Kansas Univ. Sci. Bull., vol. 13, no. 1, pp. 3-11, 1 pl., May, 1920.
5. Pleistocene mollusks from Wallace County, Kansas: Kansas Univ. Sci. Bull., vol. 13, no. 2, pp. 17-19, May, 1920.

Hanna, G. Dallas—Continued.

6. Fossil fresh-water mollusks from Oregon: Oregon, Univ., Pub., vol. 1, no. 12, 22 pp., 4 pls., August, 1922.
7. Upper Miocene lacustrine mollusks from Sonoma County, California: California Acad. Sci., Proc., 4th ser., vol. 12, no. 3, pp. 31–41, 3 pls., January 2, 1923.
8. Results of preliminary examination of seven samples of sediments from near Lomita [California]: Southern California Acad. Sci., Bull., vol. 22, pt. 2, pp. 64–65, July, 1923.
9. Pleistocene fresh-water mollusks from north-central Texas: Nautilus, vol. 37, no. 1, pp. 25–26, July, 1923.
10. Some Eocene Foraminifera near Vacaville, California: California, Univ., Dept. Geol. Sci., Bull., vol. 14, no. 9, pp. 319–328, 2 pls., October 31, 1923.
11. *Succinea avara* Say from the tar pits of California; Nautilus, vol. 37, no. 3, p. 106, January, 1924.
12. (and Gaylord, E. G.). Description of a new genus and species of fresh-water gastropod mollusk (*Scalex petrolia*) from the Etchegoin Pliocene of California: California Acad. Sci., Proc., 4th ser., vol. 13, no. 9, pp. 147–149, 2 figs., March 18, 1924.
13. Rectifications of nomenclature: California Acad. Sci., Proc., 4th ser., vol. 13, no. 10, pp. 151–186, March 18, 1924.
14. Smaller Foraminifera for stratigraphy: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 2, pp. 246–250, March–April, 1924.
15. (and McLellan, Mary E.). A new species of whale from the type locality of the Monterey group: California Acad. Sci., Proc., 4th ser., vol. 14, pp. 237–241, 5 pls., June 14, 1924.
16. Insects in the California tar traps: Science, new ser., vol. 59, p. 555, June 20, 1924.
17. (and Driver, H. L.). The study of subsurface formations in California oil field development: California State Min. Bur., Summary of Operations California Oil Fields, vol. 10, no. 3, pp. 5–26, 10 figs., September, 1924.
18. (and Hanna, Marcus A.). Foraminifera from the Eocene of Cowlitz River, Lewis County, Washington: Washington, Univ., Pub. in Geology, vol. 1, no. 4, pp. 57–62, 1 pl., October, 1924.
19. Gigantic amphibian from Kansas coal measures: Pan-Am. Geologist, vol. 42, no. 3, pp. 235–236, October, 1924.
20. Miocene marine vertebrates in Kern County, California: Science, new ser., vol. 61, pp. 71–72, January 16, 1925.
21. The extraction of fossils from refractory rocks: Jour. Geology, vol. 33, no. 5, pp. 545–547, July–August, 1925.
22. The age and correlation of the Kreyenhagen shale in California: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 6, pp. 990–999, September, 1925.
23. Tertiary expanse of North American continent in Pacific Ocean: Pan-Am. Geologist, vol. 44, no. 2, p. 147, September, 1925.
24. Was there a Pacific continent?: Science, new ser., vol. 62, pp. 491–492, November 27, 1925.
25. Paleontology of Coyote Mountain, Imperial County, California: California Acad. Sci., Proc., 4th ser., vol. 14, no. 18, pp. 427–502, 1 fig., 10 pls., March 23, 1926.
26. Microscopical research in California petroleum field: Oil and Gas Jour., vol. 24, no. 45, p. 96, April 1, 1926.

Hanna, G. Dallas—Continued.

27. (and Grant, William M.). Miocene marine diatoms from Maria Madre Island, Mexico: California Acad. Sci., Proc., 4th ser., vol. 15, no. 2, pp. 115-192, 1 fig., 11 pls., April 16, 1926.
28. Further notes on *Scaez petrolia*: Nautilus, vol. 40, no. 1, pp. 14-16, July, 1926.
29. (and Hertlein, Leo George). Expedition of the California Academy of Sciences to the Gulf of California in 1921; Geology and paleontology: California Acad. Sci., Proc., 4th ser., vol. 16, no. 6, pp. 137-156, 1 pl., April 22, 1927.
30. A note on the geology of St. Matthew Island, Bering Sea: Am. Jour. Sci., 5th ser., vol. 13, p. 450, May, 1927.
31. The lowest known Tertiary diatoms in California: Jour. Paleontology, vol. 1, no. 2, pp. 103-127, 5 pls., August, 1927.
32. Geology of the west Mexican islands: Pan-Am. Geologist, vol. 48, no. 1, pp. 1-24, 3 figs., 8 pls., August, 1927.
33. Cretaceous diatoms from California: California Acad. Sci., Occ. Papers 13, 48 pp., 5 pls., September 17, 1927.
34. (and Hertlein, Leo George). Notes on *Ostrea californica* Marcou [California]: Nautilus, vol. 41, no. 2, pp. 45-47, October, 1927.
35. Silicoflagellata from Cretaceous of California: Jour. Paleontology, vol. 1, no. 4, pp. 259-263, 1 pl., January, 1928.
36. An early reference to the theory that diatoms are the source of bituminous substances: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 5, pp. 555-556, May, 1928.
37. (and Church, C. C.). Freezing and thawing to disintegrate shales: Jour. Paleontology, vol. 2, no. 2, p. 131, June, 1928.
38. The Monterey shale of California at its type locality, with a summary of its fauna and flora: Am. Assoc. Petroleum Geologists, vol. 12, no. 10, pp. 969-983, 4 pls., October, 1928.
39. The age of the diatom-bearing shales at Malaga Cove, Los Angeles County, California: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 11, pp. 1109-1111, November, 1928.

Hanna, Marcus Albert. See also Cushman, 29, 32; Dawson, 1; Hanna, G. D., 18.

1. Notes on the genus *Venericardia* from the Eocene of the West Coast of America: California, Univ., Dept. Geol. Sci., Bull., vol. 15, no. 8, pp. 281-306, 9 pls., May 21, 1925.
2. An interesting volcanic ash from Calcasieu Parish, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 1, pp. 93-95, 1 pl., January, 1926.
3. Geology of the La Jolla quadrangle, California: California, Univ., Dept. Geol. Sci., Bull., vol. 16, no. 7, pp. 187-246, 7 pls., map, November 20, 1926.
4. Separation of fossils and other light materials by means of heavy liquids: Econ. Geology, vol. 22, no. 1, pp. 14-17, January-February, 1927.
5. An Eocene invertebrate fauna from the La Jolla quadrangle, California: California, Univ., Dept. Geol. Sci., Bull., vol. 16, no. 8, pp. 247-298, 34 pls., March 25, 1927.
6. Society of Economic Paleontologists and Mineralogists: Jour. Paleontology, vol. 1, no. 1, pp. 3-9, July, 1927.
7. Clarification of oil-discolored bromoform: Jour. Paleontology, vol. 1, no. 2, p. 145, August, 1927.

Hanna, Marcus Albert—Continued.

8. The Journal of Paleontology: Science, new ser., vol. 66, p. 295, September 30, 1927.
9. A simple thin-section lap: Jour. Paleontology, vol. 1, no. 3, p. 219, 1 pl., December, 1927.
10. Report of the secretary-treasurer [of the Society of Economic Paleontologists and Mineralogists]: Jour. Paleontology, vol. 2, no. 2, pp. 167-172, June, 1928.

Hannibal, Harold. See also Jordan, 11.

1. Notes on Tertiary sirenians of the genus *Desmostylus*: Jour. Mammalogy, vol. 3, no. 4, pp. 238-240, 2 pls., November, 1922.

Hansen, George H.

1. Hairy mammoth skeleton in Utah: Science, new ser., vol. 68, p. 621, December 21, 1928.

Hanson, George. See also Schofield, 7, 11, 14.

1. Some Canadian occurrences of pyritic deposits in metamorphic rocks: Econ. Geology, vol. 15, no. 7, pp. 574-609, 2 pls., 3 figs., November, 1920.
2. Upper Kitzault Valley, British Columbia: Canada, Geol. Survey, Summ. Rept., 1921, pt. A, pp. 7-21, 3 figs., map, 1922.
3. Reconnaissance between Kitsult River and Skeena River, British Columbia: Canada, Geol. Survey, Summ. Rept., 1922, pt. A, pp. 35-50, 2 figs (maps), 1923.
4. The Dolly Varden mine [Nass River mining division, British Columbia]: Canadian Inst. Min. and Met., Monthly Bull., no. 124, pp. 887-895, 1 fig., August, 1922; Trans., vol. 25, pp. 212-220, 1 fig. [1923].
5. The Premier mine [northwestern British Columbia]: Canadian Inst. Min. and Met., Trans., vol. 25, pp. 225-232 [1923].
6. Reconnaissance between Skeena River and Stewart, British Columbia: Canada, Geol. Survey, Summ. Rept., 1923, pt. A, pp. 29-45, 3 figs. (maps), 1924.
7. Mining activity in the area between Portland Canal and Skeena River [British Columbia]: Canadian Min. Jour., vol. 45, no. 9, pp. 198-199, 2 figs., February 29, 1924.
8. Northwestern British Columbia: Canadian Min. Jour., vol. 45, no. 22, pp. 521-524, 5 figs., May 30, 1924.
9. Driftwood Creek map area, Babine Mountains, British Columbia: Canada Geol. Survey, Summ. Rept., 1924, pt. A, pp. 19-37, 1 fig., map, 1925.
10. Prince Rupert to Burns Lake, British Columbia: Canada Geol. Survey, Summ. Rept., 1924, pt. A, pp. 38-46, 1925.
11. Reconnaissance in Zymoetz River area, Coast district, British Columbia: Canada Geol. Survey, Summ. Rept., 1925, pt. A, pp. 100-119, map, 1926.
12. Zoning of mineral deposits in British Columbia: Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 119-126, May, 1927; abstract, p. xcvi, 1927.

Hard, Herbert A. See Meinzer, 13.

Harder, Edmund Cecil. See also Allen, R. C., 2.

1. Iron-depositing bacteria and their geologic relations: U. S. Geol. Survey, Prof. Paper 113, 89 pp., 12 pls., 14 figs., 1919; abstract, Washington Acad. Sci., Jour., vol. 11, no. 3, pp. 56-57, February 4, 1921.

Harder, Edmund Cecil—Continued.

2. (and Hewett, D. F.). Recent studies of domestic manganese deposits: Am. Inst. Min. and Met. Eng., Trans., vol. 63, pp. 3-50, 1920; (abstract), Bull. no. 149, pp. 895-901, May, 1919.
3. Bacteria and iron deposition: Pahasapa Quart., vol. 9, no. 3, pp. 105-112, 2 figs., April, 1920.
4. (and Eddingfield, F. T.). The iron ores of the World: Eng. and Min. Jour., vol. 109, pp. 1060-1064, May 8, 1920.

Harding, S. T.

- 1 Ground-water resources of the southern San Joaquin Valley: California, Dept. Public Works, Div. Eng. and Irrig., and Water Rights, Bull. no. 11, 146 pp., 29 figs., 3 maps, 1927.

Hardy, Allison.

1. The A B C of geology. 137 pp., New York, Vanguard Press, 1927.

Hardy, Norman. See Cunningham, 1.

Hares, C. J.

1. Tertiary glaciation in Wyoming, Colorado, and Utah: Science, new ser., vol. 62, p. 308, October 2, 1925.
2. Glacial origin of the Bishop conglomerate of Wyoming, Colorado, and Utah (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 174-175, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 168, March, 1926.
3. What is the Denver formation? (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 175, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 168, March, 1926.
4. Post-Miocene-pre-Eocene glaciation in the Rocky Mountains (abstract) Geol. Soc. America, Bull., vol. 37, no. 1, pp. 175-176, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, pp. 168-169, March, 1926.
5. Geology and lignite resources of the Marmarth field southwestern North Dakota: U. S. Geol. Survey, Bull. 775, 110 pp., 1 fig., 14 pls. (incl. map), 1928.

Harker, Alfred.

1. The Sudbury laccolite: Geol. Mag., vol. 63, p. 192, April, 1926.

Harkness, R. B.

1. Oil and gas in Ontario: Canadian Inst. Min. and Met., Monthly Bull. no. 143, pp. 148-156, 1 fig., March, 1924; (with discussion), Trans. vol. 27 pp. 374-384, 1 fig. [1925].
2. Natural gas in 1922 and petroleum in 1922: Ontario Dept. Mines, 32d Ann. Rept., vol. 32, pt. 5, 99 pp., illus., 1924.
3. Natural gas in 1923 and petroleum in 1923: Ontario Dept. Mines, 33d Ann. Rept., vol. 33, pt. 5, 1924, 112 pp., illus., 1925.
4. Natural gas in 1924 and petroleum in 1924: Ontario Dept. Mines, 34th Ann. Rept., vol. 35, pt. 5, 74 pp., 3 figs., 1926.
5. Natural gas in 1925 and petroleum in 1925: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 5, 69 pp., 5 figs., map, 1927.
6. Natural gas in 1926 and petroleum in 1926: Ontario Dept. Mines, 36th Ann. Rept., vol. 36, pt. 4, 40 pp., 3 figs., 1928.
7. The oil and gas fields of Ontario: Canadian Inst. Min. and Met., Trans. vol. 30, pp. 597-611, map [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc., pt. 3, 81-95, map, 1928.

Harlton, Bruce H. See also Galloway, 13; Tomlinson, 4.

1. Some Pennsylvanian Ostracoda of the Glenn and Hoxbar formations of southern Oklahoma and of the upper part of the Cisco formation of northern Texas: *Jour. Paleontology*, vol. 1, no. 3, pp. 203-212, 2 pls., December, 1927.
2. Some Pennsylvanian Foraminifera of the Glenn formation of southern Oklahoma: *Jour. Paleontology*, vol. 1, no. 1, pp. 15-27, 5 pls., July, 1927.
3. Pennsylvanian Foraminifera of Oklahoma and Texas: *Jour. Paleontology*, vol. 1, no. 4, pp. 305-310, 2 pls., January, 1928.
4. Pennsylvanian ostracods of Oklahoma and Texas: *Jour. Paleontology*, vol. 2, no. 2, pp. 132-141, 1 pl., June, 1928.

Harnsberger, Thomas K.

1. The geology and coal resources of the coal-bearing portion of Tazewell County, Virginia: *Virginia Geol. Survey, Bull.* no. 19, 195 pp., 14 pls. (incl. maps), 17 figs., 1919.

Harper, Roland McMillan.

1. Resources of southern Alabama: *Alabama Geol. Survey, Special Rept.* no. 11, 152 pp., 28 fig., July, 1920.
2. Geography of central Florida: *Florida State Geol. Survey, Thirteenth Ann. Rept.*, pp. 71-288, 42 figs., 1921.
3. Natural resources of southern Florida: *Florida State Geol. Survey, Eighteenth Ann. Rept.*, pp. 27-206, 58 figs., 1927.

Harrington, George Leavitt.

1. The Anvik-Andreafski region, Alaska (including the Marshall district): *U. S. Geol. Survey, Bull.* 683, 70 pp., 7 pls. (incl. maps), 1918. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 9, no. 19, pp. 600-601, November 19, 1919.
2. The gold and platinum placers of the Tolstoi district [Alaska]: *U. S. Geol. Survey, Bull.* 692, pp. 339-351, 1 pl. (map), 1919. Abstract by G. C. Martin, *Washington Acad. Sci., Jour.*, vol. 9, no. 20, p. 636, December 4, 1919.
3. Tin mining in Seward Peninsula: *U. S. Geol. Survey, Bull.* 692, pp. 353-363, 1919. Abstract by G. C. Martin, *Washington Acad. Sci., Jour.*, vol. 9, no. 20, p. 636, December 4, 1919.
4. Graphite mining in Seward Peninsula: *U. S. Geol. Survey, Bull.* 692, pp. 363-367, 1919. Abstract by G. C. Martin, *Washington Acad. Sci., Jour.*, vol. 9, no. 20, p. 636, December 4, 1919.
5. The gold and platinum placers of the Kiwalik-Koyuk region [Alaska]: *U. S. Geol. Survey, Bull.* 692, pp. 369-400, 1 pl. (map), 1919. Abstract by G. C. Martin, *Washington Acad. Sci., Jour.*, vol. 9, no. 20, p. 636, December 4, 1919.
6. Mineral resources of the Goodnews Bay region, Alaska: *U. S. Geol. Survey, Bull.* 714, pp. 207-228, map, 1921. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 11, no. 15, p. 376, September 19, 1921.
7. Mining on Seward Peninsula, Alaska: *U. S. Geol. Survey, Bull.* 714, pp. 229-237, 1921.

Harris, Gilbert Dennison. See also Van Winkle, 1.

1. Pelecypoda of the St. Maurice and Claiborne stages: *Bull. Am. Paleontology*, vol. 6, no. 31, 260 pp., 59 pls., June 30, 1919.

Harris, Gilbert Dennison—Continued.

2. The genera *Lutetia* and *Alveinus*, especially as developed in America: *Palaeontographica Americana*, vol. 1, no. 2, pp. 105-118, 1 pl., 8 figs., Ithaca, Harris Company, 1920.
3. A reprint of the more inaccessible paleontological writings of Robert John Lechmere Guppy: *Bull. Am. Paleontology*, vol. 8, no. 35, 198 pp. 1 fig., 11 pls. (incl. portr.), March 15, 1921
4. (and Hodson, Floyd). The rudistids of Trinidad: *Palaeontographica Americana*, vol. 1, no. 3, pp. 119-162, 11 pls., November 25, 1922.
5. Notes on the paleontology [of the Island of Trinidad]: *Johns Hopkins Univ., Studies in Geology*, no. 7, pp. 87-112, 5 pls., 1926.

Harris, T. F. See Woodford, 5, 7.

Harris, T. M.

1. The Rhaetic flora of Scoresby Sound, east Greenland: *Meddelelser om Groenland*, Bd. 68, pp. 43-148, 34 figs., 13 pls., 1926.

Harrison, John Burchmore.

1. Notes on the extraneous minerals in the coral limestones of Barbados (abstract): *Geol. Mag., new ser.*, dec. 6, vol. 6, p. 382, August, 1919.
2. The genesis of a fertile soil [Barbados]: *West Indian Bull.*, vol. 18, no. 3, pp. 77-98 [1920].
3. Note on the occurrence of rhyolitic pebbles in Antigua: *West Indian Bull.*, vol. 18 no. 3, pp. 99-101 [1920].

Harrison, Thomas S.

1. Porphyry at Amarillo [Texas]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 4, pp. 434-439, July-August, 1923.
2. Some ideas regarding oil accumulation in the Rocky Mountain region (with discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 6, pp. 661-671, November-December, 1923.
3. Colorado-Utah salt domes: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 2, pp. 111-133, 15 figs., 1 pl., February, 1927.

Harrison & Eaton [firm].

1. Report on investigation of oil and gas possibilities of western Oregon: *Oregon Bur. Mines and Geology, Min. Res. Oregon*, vol. 3, no. 1, pp. 3-37, 5 pls. (relief maps and sections), March, 1920.

Harshberger, John William.

1. The origin of columnar holes in wandering dunes: *Science, new ser.*, vol. 57, pp. 727-728, June 22, 1923.

Harstad, A. J.

1. Montana sapphires: *Rocks and Minerals*, vol. 1, no. 2, pp. 21-22, December, 1926.
2. The agate: *Rocks and Minerals*, vol. 2, no. 1, pp. 3-5, March, 1927.

Hart, Gilbert.

1. Geological hammers: *Am. Mineralogist*, vol. 12, no. 9, p. 354, 1 fig., September, 1927.
2. The nomenclature of silica: *Am. Mineralogist*, vol. 12, no. 11, pp. 383-395, November, 1927.

Harter, R. F. H.

1. Some notes on the Butte, Montana, district: *Rocks and Minerals*, vol. 3, no. 3, pp. 78-82, September, 1928.

Hartley, Burton.

1. The petroleum geologist in Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 4, pp. 463-466, July-August, 1921.
2. The oil fields of Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 4, pp. 504-507, 1 fig., July-August, 1921.
3. Certain relations between production and structure in northeastern Osage County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 5, pp. 464-471, 3 figs., September-October, 1922.

Hartnagel, Chris Andrew. See also Newland, 8.

1. (and Bishop, S. C.). The mastodons, mammoths, and other Pleistocene mammals of New York State: New York State Mus. Bull., nos. 241-242, 110 pp., 25 pls., 1922.
2. Industrial geology [of New York]: New York State Mus. Bull. no. 260, pp. 18-21, 1925.
3. The oil fields of New York State. Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 4, pp. 798-802, July, 1925.
4. (and Bishop, Sherman C.). Additional records of Pleistocene mammals [in New York]: New York State Mus. Bull., no. 267, pp. 22-25, 1926.
5. Industrial geology [of New York]: New York State Mus. Bull. no. 267, pp. 34-37, 1926.
6. The mining and quarry industries of New York from 1919 to 1924: New York State Mus. Bull., no. 273, 102 pp., 1927.
7. Stark's Knob [Saratoga County, New York]: Rocks and Minerals, vol. 3, no. 3, pp. 84-85, September, 1928.

Hartsook, Arthur J.

1. Chemistry and the petroleum industry: Rice Inst. Pam., vol. 11, no. 1, pp. 74-94, January, 1924.

Hartzell, W. F.

1. Natural solidified petroleum; its mining, treatment, and uses: Eng. and Min. Jour., vol. 125, no. 6, pp. 253-254, 2 figs., February 11, 1928.

Harvey, Roger D.

1. Electrical conductivity and polished mineral surfaces: Econ. Geology, vol. 23, no. 7, pp. 778-803, 7 figs., November, 1928.

Harvey, Ruth Sawyer.

1. Drainage modifications and glaciation in the Danbury region, Connecticut: Connecticut, State Geol. and Nat. Hist. Survey, Bull. no. 30, 59 pp., 5 pls., 10 figs., 1920.

Harvie, Robert.

1. Asbestos, Weir Township, Bonaventure County, Quebec: Canada, Geol. Survey, Summ. Rept., 1920, pt. D, p. 84, 1921.
2. Notes on the allanite deposit at Lac a Baude, Champlain County, Quebec: Can. Min. Jour., vol. 42, no. 29, p. 575, July 22, 1921.
3. Dufresnoy map area, Abitibi district, Quebec: Canada, Geol. Survey, Summ. Rept., 1923, pp. 145-150, 1924.
4. Dufresnoy Lake map area; report on part of the gold belt of northwestern Quebec: Canadian Min. Jour., vol. 45, no. 16, pp. 364-366, 2 figs., April 18, 1924.

Hasebrink, A.

1. Das Eisenerzvorkommen von Wabana (Neufundland): Glückauf, Jg. 62, no. 18, pp. 553-561, 16 figs., May 1, 1926.

Haseltine, Raymond Holden.

1. Iron ore deposits of Georgia: Georgia, Geol. Survey, Bull. no. 41, 222 pp., 7 figs., 10 pls., 1924.

Haseman, J. D.

1. The humic-acid origin of asphalt: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, pp. 75-79, January-February, 1921.

Hashimoto, Tadaichi. See Becking, 1.

Hassan, A. A.

1. The geological importance of the Marathon fold [Brewster County, Texas]: Oil Trade, vol. 17, no. 2, pp. 32-34, 67-69, 1 fig., February, 1926.

Hastings, John B.

1. Mount Wheeler and Lehman Cave, White Pine County, Nevada (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 69, March 31, 1921.

Haury, P. S. See Bell, H. W., 2.

Havenor, H. E.

1. Mining camps of North America; Tintic, Utah: Eng. and Min. Jour.-Press, vol. 117, no. 9, pp. 355-361, 10 figs., March 1, 1924.

Hawaiian Volcano Observatory.

1. Weekly (after no. 1, Monthly) Bulletin, vols. 7-16, Honolulu, Hawaii, 1919-28.

Hawkins, Alfred C.

1. Two new forms on quartz from Pikes Peak [Colorado]: Am. Mineralogist, vol. 6, no. 12, p. 169, December, 1921.
2. Crystallography of three minerals from Rhode Island: Am. Mineralogist, vol. 7, no. 2, pp. 27-29, 2 figs., February, 1922.
3. (and Shannon, Earl V.). Canbyite, a new mineral [Wilmington, Delaware]: Am. Mineralogist, vol. 9, no. 1, pp. 1-5, January, 1924.
4. Alternative interpretations of some crystalline schists in southeastern Pennsylvania: Am. Jour. Sci., 5th ser., vol. 7, pp. 355-364, 1 fig., May, 1924.
5. Fluorite from Rochester, New York: Am. Mineralogist, vol. 10, no. 2, pp. 34-36, February, 1925.
6. Directional factors in radio crystal detectors: Am. Mineralogist, vol. 11, no. 6, pp. 164-165, June, 1926.
7. Notes on pyrite and celestite from Rochester, New York: Am. Mineralogist, vol. 11, no. 6, p. 165, June, 1926.
8. (and Frankenfield, John S.). Pyrite from Cornwall, Pennsylvania: Am. Mineralogist, vol. 11, no. 9, pp. 252-253, 1 fig., September, 1926.
9. Halite and glauberite cavities and included minerals from central New Jersey: Am. Mineralogist, vol. 13, no. 6, pp. 238-239, June, 1928.
10. Casts and pseudomorphs of halite and glauberite from the Triassic of New Jersey (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 167, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 1, p. 75, February, 1928.
11. Halite and glauberite cavities in the Triassic rocks of central New Jersey: Am. Jour. Sci., 5th ser., vol. 16, pp. 361-362, October, 1928.
12. Structure favors oil and gas production in New Jersey: Oil Weekly, vol. 50, no. 9, pp. 54, 56, 3 figs., August 17, 1928.

Hawkins, Herbert Leader. See also Arnold, B. W., 1.

1. Some Cretaceous Echinoidea from Jamaica: Geol. Mag., vol. 60, no. 5, pp. 199-216, 1 pl., May, 1923.

Hawkins, Herbert Leader—Continued.

2. Notes on a new collection of fossil Echinoidea from Jamaica: *Geol. Mag.*, vol. 61, no. 7, pp. 312-324, 1 pl., July, 1924.
3. The Cretaceous shales of Jamaica: *Geol. Mag.*, vol. 64, p. 142, March, 1927.

Hawley, Gladys Willetta.

1. Analyses of Illinois coals: Illinois State Geol. Survey, Cooperative Mining Series, Bull. no. 27, extract A, 68 pp., 1 fig., 1923.

Hawley, J. E. See also Bruce, 22.

1. Geology and economic possibilities of Sutton Lake area, District of Patricia: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 7, 56 pp., illus. (incl map), 1926.
2. An evaluation of the evidence of life in the Archean: *Jour. Geology*, vol. 34, no. 5, pp. 441-461, 7 figs., July-August, 1926.
3. Geology of Ogden, Bristol, and Carscallen townships, Cochrane district: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 6, pp. 1-36, 17 figs., map, 1927.

Haworth, Erasmus. See Stone, 11.

Hawtof, E. M.

1. Petroleum developments [in Cooke County]: Texas, Univ., Bull., no. 2710, pp. 63-149, January, 1928.

Hawxhurst, Robert, jr.

1. The Piz Piz gold district, Nicaragua: *Min. and Sci. Press*, vol. 122, pp. 353-360, 5 figs., March 12, 1921.

Hay, Oliver Perry, 1846-1930.

1. Descriptions of some mammalian and fish remains from Florida of probably Pleistocene age: *U. S. Nat. Mus., Proc.*, vol. 56, pp. 103-112, 3 pls., 1919.
2. [On Pleistocene geology and vertebrate paleontology of the Atlantic Coastal Plain]: *Carnegie Inst. Washington, Year Book* no. 17, 1918, pp. 311-312, February, 1919.
3. On some proboscideans of the State of New York: *Science*, new ser., vol. 49, pp. 377-379, April 18, 1919.
4. On the relative ages of certain Pleistocene deposits: *Am. Jour. Sci.*, 4th ser., vol. 47, pp. 361-375, May, 1919.
5. *Anthropologic Scraps*. No. 1, pp. 1-4, September 10, 1919 [issued Oct. 20, 1919]; no. 2, pp. 5-8, December 3, 1919; no. 3, pp. 9-12, March 29, 1920. Washington, D. C. [Private publication.]
6. Descriptions of some Pleistocene vertebrates found in the United States: *U. S. Nat. Mus., Proc.*, vol. 58, pp. 83-146, 9 pls., 4 figs., 1920.
7. [On Pleistocene vertebrates and Pleistocene geology]: *Carnegie Inst. Washington, Year Book* no. 18, 1919, pp. 361-362, March, 1920.
8. [Report of investigations on Pleistocene vertebrates]: *Carnegie Inst. Washington, Year Book* No. 19, pp. 402-404, January, 1921.
9. Descriptions of species of Pleistocene Vertebrata types or specimens of most of which are preserved in the United States National Museum: *U. S. Nat. Mus., Proc.*, vol. 59, pp. 599-642, 9 pls., 1921.
10. Report on work done on the Pleistocene epoch and its vertebrate fossils: *Carnegie Inst. Washington, Year Book* no. 20, 1921, pp. 445-446, February, 1922.
11. Description of a new fossil sea cow from Florida, *Metaxytherium floridanum*: *U. S. Nat. Mus., Proc.*, vol. 61, art. 17, 4 pp., 1 pl., 1922.

Hay, Oliver Perry—Continued.

12. Discussion of the Pleistocene and its vertebrate faunas (abstract):
Geol. Soc. America, Bull., vol. 33, no. 1, p. 156, March 31, 1922.
13. Observations on some extinct elephants. 19 pp., 10 figs., 4 pls., June 12,
1922 [private print].
14. Further observations on some extinct elephants: Biol. Soc. Washington,
Proc., vol. 35, pp. 97-101, September 30, 1922.
15. Report on work done on the Pleistocene epoch and its vertebrate fossils:
Carnegie Inst. Washington, Year Book no. 21, 1922, p. 395, January,
1923.
16. The Pleistocene of North America and its vertebrated animals from the
States east of the Mississippi River and from the Canadian provinces
east of longitude 95°. 499 pp., 25 figs., 41 pls., Carnegie
Inst. Washington, Pub. no. 322, February, 1923.
17. Description of remains of *Bison occidentalis* from central Minnesota:
U. S. Nat. Mus., Proc., vol. 63, art. 5, 8 pp., 2 pls., 1923.
18. Characteristics of sundry fossil vertebrates: Pan-Am. Geologist, vol. 39,
no. 2, pp. 101-120, 2 figs., 3 pls., March, 1923.
19. Oligocene sea turtles of South Carolina: Pan-Am. Geologist, vol. 40, no.
1, pp. 29-31, 2 pls., August, 1923.
20. Description of some fossil vertebrates from the upper Miocene of Texas:
Biol. Soc. Washington, Proc., vol. 37, pp. 1-19, 2 figs., 6 pls.,
January 29, 1924.
21. Notes on the osteology and dentition of the genera *Desmostylus* and
Cornwallius: U. S. Nat. Mus., Proc., vol. 65, art. 8, 8 pp., 2 figs.,
2 pls., 1924.
22. On the geological age of the Walker Hotel swamp deposit, in Washington,
D. C., and on the origin and the ages of the Coastal Plain
terraces in general: Washington Acad. Sci., Jour., vol. 14, no. 12,
pp. 255-264, June 19, 1924.
23. The Pleistocene of the middle region of North America and its verte-
brated animals. 385 pp., 5 figs., 29 maps, Carnegie Inst. Wash-
ington [Publication no. 322A], October, 1924.
24. A revision of the Pleistocene period in North America, based especially
on glacial geology and vertebrate paleontology: Washington Acad.
Sci., Jour., vol. 15, no. 6, pp. 126-133, March 19, 1925.
25. On remains of mastodons found in Texas, *Anancus brazosius* and
Gomphotherium cimarronis: U. S. Nat. Mus., Proc., vol. 66, art.
35, 15 pp., 9 figs., 4 pls., April 25, 1925.
26. A further and detailed description of the type of *Elephas roosevelti*
Hay and descriptions of three recently referred specimens: U. S.
Nat. Mus., Proc., vol. 66, art. 34, 6 pp., 1 fig., 4 pls., May 22, 1925.
27. On the correlation of certain Pleistocene deposits and their fossils:
Washington Acad. Sci., Jour., vol. 15, no. 11, pp. 239-246, June 4,
1925.
28. Vicissitudes of Pleistocene vertebrates (abstract): Pan-Am. Geologist,
vol. 43, no. 5, pp. 365-367, June, 1925.
29. Extinct proboscideans of Mexico: Pan-Am. Geologist, vol. 44, no. 1,
pp. 21-37, 2 pls., August, 1925.
30. Review of Dr. Günther Schlesinger's paper on mastodons: Washington
Acad. Sci., Jour., vol. 15, no. 16, pp. 381-387, October 4, 1925.
31. Report on the progress of the investigation on the Pleistocene of North
America and its vertebrate animals: Carnegie Inst. Washington,
Year Book no. 24, p. 357, December, 1925.

Hay, Oliver Perry—Continued.

32. Two new Pleistocene mastodons: Washington Acad. Sci., Jour., vol. 16, no. 2, pp. 35–41, 2 pls., January 19, 1926.
33. A collection of Pleistocene vertebrates from southwestern Texas: U. S. Nat. Mus., Proc., vol. 68, art. 24, 18 pp., 2 figs., 8 pls., 1926.
34. Description of remains of an elephant found at Port Williams, Washington: Washington Acad. Sci., Jour., vol. 16, no. 6, pp. 154–159, 1 pl., March 19, 1926.
35. The geological age of Tuolumne Table Mountain, California: Washington Acad. Sci., Jour., vol. 16, no. 13, pp. 358–361, July 9, 1926.
36. On the geological age of Pleistocene vertebrates found at Vero and Melbourne, Florida: Washington Acad. Sci., Jour., vol. 16, no. 14, pp. 387–392, August 19, 1926.
37. Professor Osborn on the mammals and the birds of the California tar pools: Science, new ser., vol. 64, pp. 426–427, October 29, 1926.
38. On the type skull of *Equus laurentius* Hay: Washington Acad. Sci., Jour., vol. 17, no. 1, pp. 5–7, January 3, 1927.
39. The Pleistocene of the western region of North America and its vertebrated animals. 346 pp., 21 maps, 12 pls., Carnegie Inst., Washington, Pub. no. 322B, July, 1927.
40. A review of recent reports on investigations made in Florida on Pleistocene geology and paleontology: Washington Acad. Sci., Jour., vol. 17, no. 11, pp. 277–283, June 4, 1927.
41. (and Cook, Harold J.). Preliminary descriptions of fossil mammals recently discovered in Oklahoma, Texas, and New Mexico: Colorado Mus. Nat. Hist., Proc., vol. 8, no. 2, pt. 1, p. 33, February 2, 1928.
42. Correlation on the basis of fossil vertebrates (abstract): Pan.-Am. Geologist, vol. 49, no. 4, pp. 297–298, May, 1928; Geol. Soc. America, Bull., vol. 39, no. 1, pp. 278–279, March 30, 1928.
43. On the antiquity of relics of man at Frederick, Oklahoma: Science, new ser., vol. 67, pp. 442–444, April 27, 1928.
44. Again on Pleistocene man at Vero, Florida: Washington Acad. Sci., Jour., vol. 18, no. 9, pp. 233–241, May 4, 1928.
45. Characteristic mammals of the early Pleistocene: Washington Acad. Sci., Jour., vol. 18, no. 15, pp. 421–430, September 19, 1928.
46. Further consideration of the shell of *Chelys* and of the constitution of the armor of turtles in general: U. S. Nat. Mus., Proc., vol. 73, art. 3, 12 pp., 2 pls., 1928.
47. An extinct camel from Utah: Science, new ser., vol. 68, pp. 299–300, September 28, 1928.

Hayes, Albert Orion. See also Bateman, 5.

1. Investigations in Nova Scotia and New Brunswick: Canada, Geol. Survey, Summ. Rept., 1918, pt. F, pp. 5–31, 3 figs., 1919.
2. The Malagash salt deposit, Cumberland County, Nova Scotia: Canada, Geol. Survey, Mem. 121, 24 pp., 1 fig., 2 maps, 1920.
3. Investigations in Nova Scotia and New Brunswick: Canada, Geol. Survey, Summ., Rept., 1919, pt. F, pp. 20–22, 1920.
4. Nova Scotian oolitic iron deposits of sedimentary origin: Canadian Min. Inst., Trans., vol. 22, pp. 112–122 [1920].
5. Carboniferous salt and potash deposits of eastern Canada (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 155, March 31, 1920.

Hayes, Albert Orion—Continued.

6. (and Bell, W. A.). The southern part of the Sydney coal field, Nova Scotia: Canada, Geol. Survey, Mem. 133, pp. 1-89, 2 figs., map, 1923.
7. Bituminous shale and other mineral occurrences in the vicinity of Sussex, New Brunswick: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 125-131, map, 1927.
8. William S. Valiant: Science, new ser., vol. 65, p. 415, April 29, 1927.
9. Wabana iron mines and deposits, Newfoundland: Mining and Metall., vol. 9, no. 260, pp. 361-366, 8 figs., August, 1928.

Hayes, Charles Willard, 1859-1916.

1. Handbook for field geologists. Third edition, revised and rearranged by Sidney Paige. 166 pp., 20 figs., 3 pls., New York, John Wiley & Sons, 1921.

Hayes, Ellen.

1. River-bank movements due to the earth's rotation: Science, new ser., vol. 55, p. 567, May 26, 1922.

Hayes, Murray O.

1. (and Eaton, Harry N.). An extinct hot spring basin in western Utah: Science, new ser., vol. 68, pp. 230-231, September 7, 1928.

Hayford, John Fillmore, 1868-1925.

1. Isostasy: Nat. Research Council, Bull., vol. 3, pt. 2, no. 17, pp. 11-16, March, 1922.
2. The establishment of isostasy: Western Soc. Eng., Jour., vol. 29, no. 9, pp. 350-362, 2 figs., September, 1924.
3. Determining the figure of the earth by triangulation: Am. Jour. Sci., 5th ser., vol. 16, pp. 121-128, August, 1928.

Haynes, Winthrop C. See Moore, R. C., 7.

Hazlitt, Henry S.

1. Origin of ore deposits: Eng. and Min. Jour.-Press, vol. 117, no. 10, p. 413, March 8, 1924.

Headden, William Parker.

1. Alkalis in Colorado (including nitrates): Colorado Agr. Coll., Agr. Exper. Sta., no. 239, 58 pp., May, 1918.
2. A contribution to the hydrology of the San Luis Valley, Colorado: Colorado Sci. Soc., Proc., vol. 11, pp. 223-238, June, 1919.
3. A tantalate and some columbites from Custer County, South Dakota: Am. Jour. Sci., 5th ser., vol. 3, pp. 293-299, April, 1922.
4. Phosphorescence and luminescence in calcites: Am. Jour. Sci., 5th ser., vol. 5, pp. 314-328, April, 1923.
5. Deportment of calcites toward radium radiations: Am. Jour. Sci., 5th ser., vol. 6, pp. 247-264, 8 figs., September, 1923.
6. The relation of composition, color, and radiation to luminescence in calcites: Colorado Sci. Soc., Proc., vol. 11, pp. 399-434, December, 1923.
7. Luminescence in the Ingleside calcites affected by acids: Am. Jour. Sci., 5th ser., vol. 8, pp. 509-517, December, 1924.

Headstrom, Birger R.

1. The origin of man. 100 pp., Princeton University Press, 1921.

- Heald, Kenneth Conrad. See also Bosworth, 1; Cheney, 1; Collingwood, 1; Ferguson, R. N., 1; Gilluly, 1; Mills, R. V. A., 5; Powers, 16; Richardson, G. B., 4; Roundy, 1.
1. Structure and oil and gas resources of the Osage Reservation, Oklahoma; T. 25 N., R. 9 E.: U. S. Geol. Survey, Bull. 686, pp. 27-41, 5 figs., 1 pl. (map), 1918.
 2. (and Bowen, C. F., and others). Structure and oil and gas resources of the Osage Reservation, Oklahoma; T. 24 N., R. 9 E.: U. S. Geol. Survey, Bull. 686, pp. 193-212, 2 pls. (incl. map), 3 figs., 1919.
 3. Structure and oil and gas resources of the Osage Reservation, Oklahoma; T. 27 N., R. 8 E.: U. S. Geol. Survey, Bull. 686, pp. 213-222, 2 pls. (incl. map), 5 figs., 1919.
 - 4 (and Mather, Kirtley F.). Structure and oil and gas resources of the Osage Reservation, Oklahoma: T. 26 N., R. 8 E.: U. S. Geol. Survey, Bull. 686, pp. 223-236, 1 pl. (map), 2 figs., 1919.
 5. The oil-bearing horizons of Wyoming: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 2, pp. 186-211, March-April, 1921.
 6. Discussion on The relative ages of major and minor folding and oil accumulation in Wyoming: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 3, pp. 408-410, May-June, 1921.
 7. Methods of detecting small quantities of petroleum: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 5, pp. 620-621, September-October, 1921.
 8. (and Rubey, W. W.). El Dorado oil field in Arkansas not on an anticline: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, pp. 358-367, 1 fig., July-August, 1922.
 9. Oil in middle Ordovician in Indiana: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, p. 374, July-August, 1922.
 10. Oil in Idaho?: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 5, pp. 472-473, September-October, 1922.
 11. The National Research Council and oil geology: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 5, pp. 467-472, September-October, 1923.
 12. Contribution to stratigraphy of western Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 2, pp. 242-243, March-April, 1924.
 13. Oil geology and science: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 4, pp. 473-484, July-August, 1924.
 14. Sandstone inclusion in salt in mine on Avery's Island: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 5, pp. 674-676, September-October, 1924.
 15. Meeting of the Geological Society of America: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 1, p. 100, January, 1926.
 16. The Kevin-Sunburst oil field, Montana: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 2, p. 197, February, 1926.
 17. Annual meeting of the Cordilleran branch of the Geological Society of America: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 4, pp. 449-450, April, 1926.
 18. The geology of the Ingomar anticline, Treasure and Rosebud counties, Montana: U. S. Geol. Survey, Bull. 786, pp. 1-37, 5 figs., 2 pls. (incl. map), October 18, 1926.
 19. Research and the American Association of Petroleum Geologists: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 9, pp. 939-948, September, 1928.

Heath, Fred T. See Wilson, H., 1.

Heck, Nicholas Hunter.

1. A deep off the coast of Mexico and Central America: *Seismol. Soc. America, Bull.*, vol. 14, no. 3, p. 200, September, 1924.
2. Earthquakes of 1925: *Seismological Soc. America, Bull.*, vol. 15, no. 2, pp. 106-113, 3 figs., June, 1925.
3. Seismological work of the Coast and Geodetic Survey: *Nat. Research Council, Bull. no. 53* (vol. 10, pt. 3), pp. 49-50, July, 1925.
4. Earthquakes: *Sci. Monthly*, vol. 22, no. 2, pp. 139-142, February, 1926.
5. Evidences of great submarine changes in configuration accompanied by earthquakes (abstract): *Pan-Am. Geologist*, vol. 45, no. 3, pp. 255-256, April, 1926.
6. How earthquakes are located: *Sci. Monthly*, vol. 22, no. 5, pp. 455-458, May, 1926.
7. Outstanding problems in seismology: *Washington Acad. Sci., Jour.*, vol. 16, no. 9, pp. 240-244, May 4, 1926.
8. Earthquake epicenters in the north Pacific: *Seismological Soc. America, Bull.*, vol. 16, no. 3, pp. 182-186, 2 figs., September, 1926.
9. Progress of seismological investigations in the United States, January 1, 1925, to June 30, 1927: *U. S. Coast and Geodetic Survey, Spec. Pub. no. 132*, 12 pp., 2 figs., 1927.
10. Some unusual submarine features in the north Pacific Ocean (abstract): *Washington Acad. Sci., Jour.*, vol. 17, no. 5, pp. 127-128, March 4, 1927.
11. Reports of progress in seismological work in the United States; C, Seismological work of the U. S. Coast and Geodetic Survey: *Nat. Research Council, Bull. no. 61*, pp. 77-79, July, 1927.
12. Earthquake history of the United States, exclusive of the Pacific region: *U. S. Coast and Geodetic Survey, Spec. Pub. no. 149*, 61 pp., map, 1928.

Hedberg, Hollis D.

1. The effect of gravitational compaction on the structure of sedimentary rocks: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 11, pp. 1035-1072, 3 figs., November, 1926.
2. The effect of gravitational compaction on the structure of sedimentary rocks; a reply to a discussion by W. W. Rubey: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 8, pp. 875-886, August, 1927.

Heikes, Victor C.

1. (and Loughlin, G. F.). Arsenic in 1922: *U. S. Geol. Survey, Mineral Resources*, 1922, pt. 1, pp. 53-76, 2 figs., September 17, 1923.
2. (and Loughlin, G. F.). Arsenic in 1923: *U. S. Geol. Survey, Mineral Resources*, 1923, pt. 1, pp. 159-181, 2 figs., November 13, 1924.
3. (and Loughlin, G. F.). Arsenic deposits in the United States: *U. S., 68th Cong., 1st Sess., Sen. Doc. no 27*, 7 pp., 1924.

Heiland, C. A.

1. Construction, theory, and application of magnetic field balances: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 12, pp. 1189-1200, 7 figs., December, 1926.
2. Schweydar-Bamberg types of Eötvös torsion balance: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 12, pp. 1201-1209, 3 figs., December, 1926.
3. Modern instruments and methods of seismic prospecting: *Am. Inst. Min. and Met. Eng., Tech. Pub. no. 149*, 19 pp., 13 figs., October, 1928.

Heim, Arnold.

1. Vulkane in der Umgebung der Oase La Purisima auf der Halbinsel Nieder-Kalifornien: Zeitschr. Vulkanologie, Bd. 6, H. 1, pp. 15–21, 7 figs., 4 pls. (incl. map), April, 1921.
2. The Tertiary of southern Lower California: Geol. Mag., vol. 59, pp. 529–547, 7 figs., 2 pls., December, 1922.
3. Notes on the Jurassic of Tamazunchale, Sierra Madre Oriental, Mexico: Eclogae Geologicae Helvetiae, vol. 20, no. 1, pp. 84–87, 2 figs., October, 1926.
4. (and others). Vulkanische Ereignisse; Berichte über die jüngste vulkanische Tätigkeit in Mittelamerika: Zeitschr. Vulkanologie, Bd. 10, H. 2, pp. 114–119, December, 1926.

Heist, H. D.

1. Geological position of test wells drilled in eastern Utah oil fields: Salt Lake Min. Rev., vol. 24, no. 1, p. 19, 1 fig., April 15, 1922.

Heller, A. H.

1. California oil field development, with special reference to wildcatting: Oil Bull., vol. 13, no. 5, pp. 513–515, 517–519, 521, 4 figs., May, 1927.

Hellman, Milo. See also Gregory, 7, 12, 14.

1. Racial characters in human dentition; Part I, A racial distribution of the *Dryopithecus* pattern and its modifications in the lower molar teeth of man: Am. Philos. Soc., Proc., vol. 77, no. 2, pp. 157–174, 7 figs., 1928.

Henbest, Lloyd G.

1. Fusulinellas from the Stonefort limestone member of the Tradewater formation [Illinois]: Jour. Paleontology, vol. 2, no. 1, pp. 70–85, 2 figs., 3 pls., March, 1928; abstract, Geol. Soc. America, Bull., vol. 39, no. 1, p. 291, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 3, pp. 226–227, April, 1928.
2. Pre-Pennsylvanian surface west of the Duquoin anticline: Illinois State Acad. Sci., Trans., vol. 20, pp. 265–268, 3 figs., March, 1928.

Henderson, Charles William.

1. Mining in Colorado; a history of discovery, development, and production: U. S. Geol. Survey, Prof. Paper 138, 263 pp., 20 figs., 1 pl. (map), 1926.

Henderson, E. P. See Ross, C. S., 13; Schaller, 9; Short, 3.

Henderson, George G.

1. The geology of Tom Green County: Texas Univ., Bull., no. 2807, 116 pp., 2 figs., 8 pls. (incl. map), February 15, 1928.

Henderson, Junius.

1. The Cretaceous formations of the northeastern Colorado plains: Colorado Geol. Survey, Bull. 19, pp. 7–57, 1920.
2. The foothills formations of north central Colorado: Colorado Geol. Survey, Bull. 19, pp. 58–96, 11 figs., 1 pl. (map), 1920.
3. The nomenclature and systematic positions of some North American fossils and recent mollusks: Nautilus, vol. 33, no. 4, pp. 118–122, April, 1920.
4. The glacial geology of Grand Mesa, Colorado: Jour. Geology, vol. 31, no. 8, pp. 676–678, November–December, 1923.

Henderson, Junius—Continued.

5. Footprints in Pennsylvanian sandstones of Colorado: *Jour. Geology*, vol. 32, no. 3, pp. 226-229, 3 figs., April-May, 1924.
6. The origin of the Green River formation: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 5, pp. 662-668, December-October, 1924.
7. *Geology in its relation to landscape*. vii, 152 pp., illus., Boston, Massachusetts, The Stratford Company, 1925.
8. Sources of material from which petroleum may have been derived: *California Acad. Sci., Proc.*, 4th ser., vol. 15, no. 10, pp. 269-278, April, 26, 1926.
9. A Pleistocene fossil locality on Big Hope Island, Puget Sound [Washington]: *Colorado, Univ., Studies*, vol. 16, no. 1, pp. 1-3, June, 1927.

Hendricks, J. A. See also Boyd, H. E.

Hendricks, Robert.

1. (and Knight, Nicholas). Some Iowa sandstone: *Iowa Acad. Sci., Proc.*, 1927, vol. 34, pp. 247-248 [1928].

Hendrickson, A. B.

1. Report on the Kern front area of the Kern River oil field: *California State Min. Bur., Summary of Operations California Oil Fields*, vol. 13, no. 7, pp. 5-18, 5 pls., January, 1928.

Hendrickson, Victor J.

1. The Kevin-Sunburst oil field, Montana: *Oil Bull.*, vol. 13, no. 9, pp. 929, 931, 933, 990, September, 1927.

Henley, A. S.

1. The Big Hill salt dome, Jefferson County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 590-593, 2 figs., May-June, 1925; *Geology of salt dome oil fields*, pp. 497-500, 2 figs., 1926.

Hennen, Ray Vernon.

1. Fayette County. *West Virginia Geol. Survey*, 1002 pp., 24 pls. 23 figs., 2 maps in atlas, 1919.
2. Israel Charles White: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 3, pp. 339-351, portr., March, 1928.

Henniger, W. F.

1. Occurrence of sulphur waters in the Gulf coast of Texas and Louisiana, and their significance in locating new domes: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 1, pp. 35-37, January-February, 1925; *Geology of salt dome oil fields*, pp. 774-776, 1926.

Henning, John L.

1. Sulphur mining (with discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 3, pp. 242-252, 1919.

Henny, Gerard.

1. Some notes on the geology of the south Joaquin Valley, California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 6, pp. 611-615, 1 fig., June, 1927.

Henriksen, Kai L.

1. Critical notes upon some Cambrian arthropods described by Charles D. Walcott: *Dansk Naturh. Foren., Vidensk. Medd.*, Bd. 86 (separate, 20 pp.), 1928; *Muséum de minéralogie et de géologie de l'Université de Copenhague, Communications paléontologiques*, no. 28.

Henry, Earl C.

1. Mining methods in the Mineville, New York, district: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1192, 7 pp., October, 1922.

Herald, Frank A. See Bauer, C. M., 2.

Hereza y Ortuño, Juan.

1. Synopsis of a theory of metallogeny: Eng. and Min. Jour.-Press, vol. 119, no. 4, pp. 160-162, January 24, 1925.

Hernández, Apolinar. See also Gálvez, 5.

1. Informe preliminar acerca de las aguas subterráneas de San Luis Potosí á Catorce: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 12, pp. 21-30, August, 1925.
2. Informe preliminar de las aguas subterráneas de las zonas de Cedral, Matehuala, Vallejo y Ciudad del Maíz, en el Estado de San Luis Potosí: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 17, pp. 20-30, June, 1926.

Herold, Stanley C.

1. Jamin action—what it is and how it affects production of oil and gas: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 6, pp. 659-670, 9 figs., June, 1928.

Heroy, William B.

1. Rock pressure: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 4, pp. 355-384, 4 figs., April, 1928.

Herrera, Alfonso L.

1. Mineralogía y geología. 471 pp., illus., Mexico, Herrero Hermanos, Sucesores, 1925.

Hertel, F. W.

1. Ventura is one of California's greatest [oil] fields: Oil Weekly, vol. 44, no. 11, pp. 47-50, 52, 54, 56, 58, 10 figs., March 4, 1927.
2. (and Bernt, D. M. jr., and Pieper, H. K.). Oil fields of Ventura County and Newhall district [California]: Oil Bull., vol. 14, no. 4, pp. 370-374, 1 fig., (map), April, 1928.
3. Ventura Avenue oil field, Ventura County, California: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 7, pp. 721-742, 7 figs., July, 1928.

Hertlein, Leo George. See also Hanna, G. D., 29, 34; Jordan, E. K., 2, 4.

1. Pectens from the Tertiary of Lower California: California Acad. Sci., Proc., 4th ser., vol. 14, no. 1, pp. 1-35, 6 pls., July 21, 1925.
2. New species of marine fossil Mollusca from western North America: Southern California Acad. Sci., Bull., vol. 24, pt. 2, pp. 39-44, 2 pls., August 17, 1925.
3. (and Crickmay, Colin H.). A summary of the nomenclature and stratigraphy of the marine Tertiary of Oregon and Washington: Am. Philos. Soc., Proc., vol. 64, no. 2, pp. 224-282, 1925.
4. (and Jordan, Eric Knight). Paleontology of the Miocene of Lower California: California Acad. Sci., Proc., 4th ser., vol. 16, no. 19, pp. 605-646, 5 pls., September 2, 1927.
5. *Pecten (Patinopecten) lohri*, new name for *Pecten oweni* Arnold, a Pliocene species from California: Nautilus, vol. 41, no. 3, pp. 93-94, January, 1928.
6. Preliminary report on the paleontology of the Channel Islands, California: Jour. Paleontology, vol. 2, no. 2, pp. 142-157, 4 pls., June, 1928.

Hess, Frank L. See also Foshag, 31; Larsen, 18; Stone, 11.

1. Tactite, the product of contact metamorphism: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 377-378, November, 1918.
2. Cobalt, molybdenum, nickel, titanium, tungsten, radium, uranium, and vanadium in 1916: *U. S. Geol. Survey, Mineral Resources*, 1916, pt. 1, pp. 775-807, February 25, 1919.
3. The tungsten resources of the world: *Eng. and Min. Jour.*, vol. 108, pp. 715-722, 1 fig., November 1, 1919.
4. Phenocrysts in granitic intrusions (abstract): *Washington Acad. Sci. Jour.*, vol. 9, no. 10, pp. 294-295, May 19, 1919.
5. [Note on cobalt-bearing veins, Lemhi County, Idaho] (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 16, p. 501, October 4, 1919.
6. (and Wells, Roger C.). Brannerite, a new uranium mineral [Stanley Basin, central Idaho]: *Franklin Inst., Jour.*, vol. 189, no. 2, pp. 225-237, 2 figs., February, 1920; no. 6, pp. 779-780, June, 1920.
7. Cobalt, molybdenum, tantalum, titanium, radium, uranium, and vanadium in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 1, pp. 791-817, 1 fig., June 29, 1920.
8. Cobalt, molybdenum, nickel, titanium, tungsten, radium, uranium, and vanadium in 1917: *U. S. Geol. Survey, Mineral Resources*, 1917, pt. 1, pp. 899-959, August 31, 1920.
9. Nickel in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 1, pp. 783-790, June 29, 1920.
10. Tungsten in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 1, pp. 973-1026, March 21, 1921.
11. (and Larsen, E. S.). Contact-metamorphic tungsten deposits of the United States: *U. S. Geol. Survey, Bull.* 725, pp. 245-309, 10 figs., 4 pls. (incl. map), August 9, 1920. Abstract by R. W. Stone: *Washington Acad. Sci., Jour.*, vol. 11, no. 20, p. 494, December 4, 1921.
12. Cobalt, molybdenum, nickel, tantalum, titanium, tungsten, radium, uranium, and vanadium in 1919: *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 1, pp. 711-729, November 10, 1921.
13. Cobalt, molybdenum, nickel, tantalum, titanium, tungsten, radium, uranium, and vanadium in 1920: *U. S. Geol. Survey, Mineral Resources*, 1920, pt. 1, pp. 401-417, February 20, 1922.
14. Uranium-bearing asphaltite sediments of Utah: *Eng. and Min. Jour. Press*, vol. 114, no. 7, pp. 272-276, 4 figs., August 12, 1922.
15. Review of Radium, uranium, and vanadium deposits of southwestern Colorado, by R. C. Coffin and others (*Colorado Geol. Survey, Bull.* 16, 1921): *Econ. Geology*, vol. 17, no. 6, pp. 506-511, September 1922.
16. Cobalt, molybdenum, nickel, tantalum, titanium, tungsten, radium, uranium, and vanadium in 1921: *U. S. Geol. Survey, Mineral Resources*, 1921, pt. 1, pp. 207-233, October 23, 1922.
17. Ilsemannite at Ouray, Utah: *U. S. Geol. Survey, Bull.* 750, pp. 1-10, 1 fig., 2 pls., June 28, 1923.
18. Molybdenum deposits—a short review: *U. S. Geol. Survey, Bull.* 761, 35 pp., 4 figs., 10 pls., 1924.
19. Cobalt, molybdenum, nickel, tantalum, titanium, tungsten, radium, uranium, and vanadium in 1922: *U. S. Geol. Survey, Mineral Resources*, 1922, pt. 1, pp. 557-583, March 14, 1924.

Hess, Frank L.—Continued.

20. New and known minerals from the Utah-Colorado carnotite region: U. S. Geol. Survey, Bull. 750, pp. 63–78, 8 pls., October 14, 1924.
21. Rare metals; cobalt, molybdenum, nickel, tantalum, titanium, tungsten, radium, uranium, and vanadium in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 235–258, November 29, 1924.
22. The age of the earth: Sci. Monthly, vol. 20, no. 6, pp. 597–602, June, 1925.
23. The natural history of the pegmatites: Eng. and Min. Jour.-Press, vol. 120, no. 8, pp. 289–298, 17 figs., August 22, 1925.
24. Platinum near Centennial, Wyoming: U. S. Geol. Survey, Bull. 780, pp. 127–135, 1 fig., January 13, 1926.
25. Oolites (abstract): Washington Acad. Sci., Jour., vol. 16, no. 3, pp. 76–77, February 4, 1926.
26. Potash and the South: Min. Congress Jour., vol. 12, no. 5, pp. 344–346, 398, 3 figs., May, 1926.
27. Rare metals, cobalt, molybdenum, nickel, tantalum, titanium, tungsten, radium, uranium, and vanadium in 1924: U. S., Bur. Mines, Mineral Resources U. S., 1924, pt. 1, pp. 451–476, June 7, 1926.
28. The sources and use of cesium (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, pp. 124–125, March 4, 1927.
29. Notes on Florida phosphate deposits (abstract): Washington Acad. Sci., Jour., vol. 17, no. 12, p. 321, June 19, 1927.
30. (and Foshag, William F.). Crystalline carnotite from Utah: U. S. Nat. Mus., Proc., vol. 72, art. 12, 6 pp., 1927.
31. [Occurrence of pollucite near Hebron, Maine] (abstract): Washington Acad. Sci., Jour., vol. 18, no. 9, p. 262, May 4, 1928.

Hewett, Donnel Foster. See also DeGolyer, 9; Harder, 2; Stose, 1.

1. Manganese ore as a war mineral (abstract): Geol. Soc. America, Bull., vol. 30, pp. 97–98, March 31, 1919.
2. [Manganese deposits] (abstract): Washington Acad. Sci., Jour., vol. 9, no. 13, pp. 386–387, July 19, 1919.
3. Manganese and manganiferous ores in 1917: U. S. Geol. Survey, Mineral Resources, 1917, pt. 1, pp. 665–696, 1 fig., October 31, 1919.
4. The Heart Mountain overthrust, Wyoming: Jour. Geology, vol. 28, no. 6, pp. 536–557, 4 figs. (incl. map), September–October, 1920. Abstract, Washington Acad. Sci., Jour., vol. 10, no. 2, p. 51, January 19, 1920; Geol. Soc. America, Bull., vol. 31, no. 1, p. 122, March 31, 1920.
5. Manganese and manganiferous ores in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 607–656, 1 fig. 1 pl., April 10, 1920.
6. Measurements of folded beds: Econ. Geology, vol. 15, no. 5, pp. 367–385, 6 figs., July–August, 1920.
7. (and Shannon, E. V.). Orientite, a new hydrous silicate of manganese and calcium from Cuba: Am. Jour. Sci., 5th ser., vol. 1, pp. 491–506, 5 figs., June, 1921.
8. Manganese deposits near Bromide, Oklahoma: U. S. Geol. Survey, Bull. 725, pp. 311–329, 4 figs., July 26, 1921.
9. Carnotite in southern Nevada: Eng. and Min. Jour.-Press, vol. 115, no. 5, pp. 232–235, 4 figs., February 3, 1923.
10. Structure of the Spring Mountain Range, southern Nevada (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, pp. 89–90, March 30, 1923.

Hewett, Donnel Foster—Continued.

11. Dolomitization in southern Nevada (abstract, with discussion by James F. Kemp, R. B. Sosman, and L. C. Graton): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 124-125, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, p. 159, March, 1924.
12. Dolomitization near Goodsprings, Nevada (abstract): *Washington Acad. Sci., Jour.*, vol. 14, no. 7, pp. 164-165, April 4, 1924.
13. Deposits of magnesia alum near Fallon, Nevada: *U. S. Geol. Survey, Bull.* 750, pp. 79-86, 2 figs., October 23, 1924.
14. (and Schaller, W. T.). Hisingerite from Blaine County, Idaho: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 29-38, 1 fig., July, 1925.
15. Carnotite discovered near Aguila, Arizona: *Eng. and Min. Jour.*, Press, vol. 120, no. 1, p. 19, July 4, 1925.
16. Geology and oil and coal resources of the Oregon Basin, Meeteetse, and Grass Creek Basin quadrangles, Wyoming: *U. S. Geol. Survey, Prof. Paper* 145, 111 pp., 10 figs., 32 pls. (incl. maps), 1926.
17. Progress in the survey of the Ivanpah quadrangle, Nevada-California (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 164-165, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 164, March, 1926.
18. Late Tertiary thrust faults in the Mojave Desert, California: *Nat. Acad. Sci., Proc.*, vol. 14, no. 1, pp. 7-12, 2 figs., January, 1928; abstract, *Science*, new ser., vol. 65, p. 480, May 13, 1927.
19. A manganese deposit of Pleistocene age in Bannock County, Idaho: *U. S. Geol. Survey, Bull.* 795, pp. 211-218, 1 fig., January 16, 1928.
20. Two Tertiary epochs of thrust-faulting in the Mojave Desert, California (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 178-179, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 140, March, 1928.
21. (and Shannon, Earl V., and Gonyer, Forest A.) Zeolites from Ritter Hot Spring, Grant County, Oregon: *U. S. Nat. Mus., Proc.*, vol. 73, art. 16, 18 pp., 2 pls., 1928.
22. Dolomitization and ore deposition: *Econ. Geology*, vol. 23, no. 8, pp. 821-863, 8 figs., December, 1928.

Hewitt, E. A.

1. Exploration methods in the Park City, Utah, district: *Min. Congress Jour.*, vol. 12, no. 1, pp. 54-55, 2 figs., January, 1928.

Heyl, Paul Renno.

1. The density of the earth and the inferences to be drawn from it: *Nat. Research Council, Bull.*, vol. 11, pt. 2, no. 56, pp. 25-26, November, 1926; abstract, *Am. Jour. Sci.*, 5th ser., vol. 12, p. 271, September, 1926.

Hibbard, F. N.

1. A new seismograph at Chicago: *Seismol. Soc. America, Bull.*, vol. 9, no. 2, pp. 42-44, 2 figs., June, 1919.

Hibbard, Raymond R.

1. Conodonts from the Portage group of western New York: *Am. Jour. Sci.*, 5th ser., vol. 13, pp. 189-208, 4 pls., March, 1927.
2. Western New York conodonts: *Rocks and Minerals*, vol. 3, no. 4, pp. 117-119, 1 pl., December, 1928.

Hibbs, G. Gillingham.

1. Boulder County [Colorado] fluorspar: *Eng. and Min. Jour.*, vol. 109, pp. 494-495, February 21, 1920.

Hice, Richard Roberts.

1. The white clay possibilities of Pennsylvania: *Am. Ceramic Soc., Jour.*, vol. 2, no. 9, pp. 685-694, 1 pl., September, 1919.

Hicks, Clifford. See Patton, L. T., 4.

Hicks, W. B. See also Gale, 1; Pennsylvania Topographic and Geologic Survey.

1. Potash in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 2, pp. 385-445, March 31, 1920.
2. (and Nourse, M. R.). Potash in 1919: *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 2, pp. 77-94, December 8, 1920.
3. Potash resources of Nebraska: *U. S. Geol. Survey, Bull.* 715, pp. 125-139, 1 fig., February 8, 1921. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.* vol. 11, no. 15, p. 376, September 19, 1921.

Higgins, Daniel Franklin. See also Leith, 10.

1. Determination of dip and strike from any two components, and the inverse problem: *Econ. Geology*, vol. 18, no. 1, pp. 26-52, 16 figs., 2 pls., January-February, 1923.
2. "Epi-anticlinal" faults (discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 11, pp. 1233-1234, November, 1927.

Hill, B. F. See Stone, 11.

Hill, E. G. See Fettke, 7.

Hill, Edward Allison.

1. Geological notes on oil structures. 85 pp., 6 pls., San Francisco, Hall-Gutstadt Company, 1922.
2. Notes on Florida oil possibilities, historical and geological: *Oil Age*, vol. 24, no. 10, pp. 38-54, 2 figs., November, 1927.

Hill, H. B.

1. (and Sutton, Chase E.). Production and development problems in the Powell oil field, Navarro County, Texas: *U. S. Bur. Mines, Bull.* 284, 122 pp., 35 figs., 1928.

Hill, James Madison.

1. The platinum situation: *Eng. and Min. Jour.*, vol. 108, pp. 131-137, 4 figs., July 26, 1919.
2. Tin; its political and commercial control: *Eng. and Min. Jour.*, vol. 109, pp. 1011-1020, 2 figs., May 1, 1920.
3. The Taylor Creek tin deposits, New Mexico: *U. S. Geol. Survey, Bull.* 725, pp. 347-359, 1 fig., November 18, 1921.
4. The Los Burros district, Monterey County, California: *U. S. Geol. Survey, Bull.* 735, pp. 323-329, 1923.
5. California gold production, 1849-1923: *Econ. Geology*, vol. 21, no. 2, pp. 172-179, 1 fig., March-April, 1926.

Hill, James H.

1. Clay deposits of the Alberhill Coal and Clay Company: *California State Min. Bur., Mining in California*, vol. 19, no. 4, pp. 185-210, 19 figs., September, 1923.

Hill, Robert Thomas. See also Sellards, 18; Texas, Attorney General, 1.

1. The Gulf coast salt domes: *Econ. Geology*, vol. 14, no. 8, pp. 643-644, December, 1919.
2. The rifts of southern California: *Seismol. Soc. America, Bull.*, vol. 10, no. 3, pp. 146-149, September, 1920.

Hill, Robert Thomas—Continued.

3. Two limestone formations of the Cretaceous of Texas which transgress time diagonally: *Science*, new ser., vol. 53, pp. 190-191, February 25, 1921.
4. Data on the geographic nomenclature of the southern California and Texas regions (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 67, March 30, 1923.
5. Further contributions to the knowledge of the Cretaceous of Texas and northern Mexico (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 72-73, March 30, 1923.
6. Sand rivers of Texas and California and some of their accompanying phenomena (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 95, March 30, 1923.
7. Summary of physiographic investigations made in connection with the Oklahoma-Texas boundary suit: *Texas, Univ., Bull.*, no. 2327, pp. 157-172, August, 1923.
8. Southern California geology and Los Angeles earthquakes; with an introduction to the physical geography of the region. 232 pp., 38 figs., 4 pls. (maps), published by the Southern California Academy of Sciences, Los Angeles, California, 1928.
9. Earthquake conditions in southern California (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 188-189, March 30, 1928.
10. Three great upholding formations in the physiography of the Southwest (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 264, March 30, 1928.
11. Transcontinental structural digression (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 265, March 30, 1928.

Hillebrand, William Francis.

1. The analysis of silicate and carbonate rocks (a revised and enlarged edition of Bull. 422): *U. S. Geol. Survey, Bull.* 700, 285 pp., 23 figs., 1919.
2. Carnotite and tyuyamunite and their ores in Colorado and Utah: *Am. Jour. Sci.*, 5th ser., vol. 8, pp. 201-216, September, 1924; abstract *Science*, new ser., vol. 59, p. 444, May 16, 1924.

Hills, Thomas M.

1. Some estimates of the thickness of the sedimentary rocks of Ohio: *Jour. Geology*, vol. 28, no. 1, pp. 84-86, January-February, 1920.
2. Glaciation of the Upper Kern Canyon and its tributaries: *Sierra Club Bull.*, vol. 13, no. 1, pp. 17-19, February, 1928.

Hills, Victor Gardiner.

1. Petrified wood carrying silver at Creede, Colorado: *Eng. and Min. Jour. Press*, vol. 117, no. 16, p. 647, April 19, 1924.
2. Magmas, dikes, and veins: *Mining and metallurgy*, vol. 8, no. 244, pp. 189-190, April, 1927.

Hill-Tout, Charles.

1. The phylogeny of man from a new angle: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 15, sec. 2, pp. 47-82, 6 pls., 1921.
2. Man closer to ancestral type than anthropoid apes (abstract): *Pan-Am Geologist*, vol. 42, no. 3, p. 236, October, 1924.

Hinds, Henry.

1. Description of the Colchester and Macomb quadrangles, Illinois: U. S. Geol. Survey, Geol. Atlas, Colchester-Macomb folio, no. 208, 14 pp., 14 figs., 4 maps, 1919.
2. Unconformities in the Pennsylvanian: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 12, pp. 1303-1304, December, 1926.

Hinds, Norman Ethan Allen.

1. An alkali gneiss from the pre-Cambrian of New Jersey: Am. Jour. Sci., 5th ser., vol. 1, no. 4, pp. 355-364, April, 1921.
2. Geology of Kauai, Hawaiian Islands (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 125, March 31, 1922.
3. Geological observations on the Island of Maui, Hawaii: Science, new ser., vol. 61, pp. 316-318, March 20, 1925.
4. Geology of the Island of Maui, Hawaii (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, pp. 173-174, March 30, 1925.
5. The Green River formation: Science, new ser., vol. 62, p. 34, July 10, 1925.
6. Melilite and nephelite basalt in Hawaii: Jour. Geology, vol. 33, no. 5, pp. 526-539, July-August, 1925.
7. Maui and the Maui group, Hawaii: Geog. Soc. Philadelphia, Bull., vol. 23, no. 4, pp. 147-165, 3 figs., 2 pls., October, 1925.
8. Amphitheater valley heads: Jour. Geology, vol. 33, no. 8, pp. 816-818, 1 fig. November-December, 1925.
9. Fault topography in Hawaii (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 210, March 30, 1926.
10. Geomorphology of the Island of Maui, Hawaii (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 215-216, March 30, 1926.
11. Intrusive rocks in Klamath Mountains, California (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 308-309, May, 1928.
12. Maui Volcano, Hawaii (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 311-312, May, 1928.

Hintze, Ferdinand Friis.

1. Oil accumulation in relation to periods of folding (with discussion by J. M. Douglas, Max Ball, and Glen Ruby): Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 1, pp. 58-66, January-February, 1923.

Hippard, C. W.

1. Résumé of the theory of the origin of coal: Coal Age, vol. 16, pp. 104-107, July 17, 1919.

Hirschi, H.

1. Radioaktivität zweier Eruptivgesteine and ihre genetische Beziehung zur Pechblende von Central City, Colorado: Schweizerische Mineralogische und Petrographische Mitteilungen, Bd. 3, H. 3-4, pp. 240-252, 1923.
2. Beiträge zur Petrographie von Baja California, Mexiko: Schweizerische Min. und Petrog. Mitt., Bd. 6, H. 2, pp. 346-350, map, 1926.
3. Dumortierit-Andalusitgesteine des Rochester Districts (Nevada): Schweizerische Min. und Petrog. Mitt., Bd. 7, H. 1, pp. 45-53, 1927.
4. (and De Quervain, F.). Beiträge zur Petrographie von Baja California (Mexiko): Schweizerische Min. und Petrog. Mitt., Bd. 7, H. 1, pp. 142-164, 1927; Bd. 8, H. 2, pp. 323-356, 1928.

Hisazumi, Hisakichi.

1. Informe preliminar acerca de la geología petrolera de la zona comprendida entre los ríos Tecolutla y Misantla, en los estados de Veracruz y Puebla: Mexico, Inst. geol., Foll. divulgación, no. 23, 20 pp., 1926.

Hitchcock, Charles Henry, 1836-1919. See also Grier, 4.

1. The great fault of the Sudbury nickel district [Ontario]: Canadian Min Jour., vol. 42, no. 11, p. 215, 1 fig., March 18, 1921.

Hite, M. P.

1. Some observations of storm effects on ocean inlets [Atlantic coast, Maryland, North Carolina]: Am. Jour. Sci., 5th ser., vol. 7, pp. 319-326, 4 figs., April, 1924.

Hixon, Hiram W. See also Johnson, R. H., 2; Matteson, 2; White, D., 1; Willis, 4.

1. The inorganic origin of petroleum: Eng. and Min. Jour., vol. 112, no. 16, pp. 622-623, October 15, 1921.
2. Is coal a mineralized peat bog or has it been formed from woody deposits of great river deltas?: Coal Age, vol. 21, no. 1, pp. 8-9, January 5, 1922.
3. Origin of petroleum: Eng. and Min. Jour.-Press, vol. 117, no. 9, pp. 370-371, March 1, 1924.
4. Deep-seated ore chemistry: Eng. and Min. Jour.-Press, vol. 118, no. 7, p. 263, August 16, 1924.
5. Magma: Eng. and Min. Jour.-Press, vol. 118, no. 24, pp. 942-943, December 13, 1924.
6. Hydrocarbon veindikes and oil shales: Eng. and Min. Jour.-Press, vol. 119, no. 16, p. 653, April 18, 1925.
7. Chlorine as a magmatic solvent for metals: Eng. and Min. Jour.-Press, vol. 121, no. 6, p. 249, February 6, 1926.
8. Ore deposits and allied phenomena (discussion): Eng. and Min. Jour., vol. 123, no. 13, p. 533, March 26, 1927.
9. Magmas, dikes, and veins: Mining and Metallurgy, vol. 8, no. 245, p. 232, May, 1927; no. 249, pp. 391-392, September, 1927.

Hoadley, Charles W.

1. Some mineral localities in Orange County, New York: Rocks and Minerals, vol. 3, no. 2, pp. 33-34, June, 1928.

Hobbs, William Herbert. See also Bucher, 6; Daly, 12; Loomis, 4; Louderback, 4; Shepard, 8; Stose, 21; Taber, 6; Visher, 4; Woodring, 8; Woodworth, 1.

1. The peculiar weathering process of desert regions with illustrations from Egypt and the Soudan: Michigan Acad. Sci., 20th Ann. Rept., pp. 93-99, 8 pls., 1918.
2. Calcination volcanoes (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 115, March 31, 1920.
3. Extremes of mountain-glacier erosion (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 130, March 31, 1920.
4. The mechanics of the glacial anticyclone illustrated by experiment: Nature, vol. 105, pp. 644-645, 2 figs., July 22, 1920.
5. Earth evolution and its facial expression. 178 pp., 84 figs., New York, The Macmillan Company, 1921.
6. The fixed glacial anticyclone compared to the migrating anticyclone: Am. Philos. Soc., Proc., vol. 60, no. 1, pp. 34-42, 1921.

Hobbs, William Herbert—Continued.

7. Evolution of arcuate mountains (abstract with discussion by A. C. Lawson, B. Willis, and S. Taber): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 30–31, March 31, 1921.
8. Doctrine of the zone of flow challenged (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 32, March 31, 1921.
9. Crustal deformation in the Pacific and Atlantic regions (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 32–33, 1921.
10. Postglacial faulting in the French River district of Ontario: *Am. Jour. Sci.*, 5th ser., vol. 1, pp. 507–509, 2 figs., June, 1921.
11. Studies of the cycle of glaciation: *Jour. Geology*, vol. 29, no. 4, pp. 370–386, 15 figs., May–June, 1921.
12. Les glaciers du monde actuel. Trans. from English by A. Allix and J. Blache. Extrait de la *Revue de géographie alpine* (Université de Grenoble), vol. 10, 99 pp., 20 figs., 9 pls., 1922.
13. A significant contrast between the Atlantic and Pacific coastal regions (abstract): *Assoc. Am. Geographers, Annals*, vol. 11, pp. 124–125 [1922?].
14. The southwestern Michigan meteor of November 26, 1919: *Michigan Acad. Sci., Papers*, vol. 1, pp. 253–268, 3 figs., 1923.
15. The rate of movement in vertical earth adjustments connected with the growth of mountains: *Am. Philos. Soc., Proc.*, vol. 62, no. 2, pp. 63–73, 2 figs., 1923.
16. Correspondence between the Gondwana system of Hindustan and the Newark system of the eastern United States (abstract with discussion by E. W. Berry, C. K. Wentworth, Sidney Powers, George C. Martin, and David White): *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 82–85, March 30, 1923.
17. The Asiatic arcs: *Geol. Soc. America, Bull.*, vol. 34, no. 2, pp. 243–252, 3 figs., June 30, 1923.
18. The growing mountain ranges of the Pacific region: *Pan-Pacific Sci. Cong., Australia, 1923, Proc.*, vol. 1, pp. 746–757 [1924].
19. Contrasted lava types in the Pacific region: *Pan-Pacific Sci. Cong., Australia, 1923, Proc.*, vol. 1, pp. 838–842 [1924].
20. Reef formations as an index of mountain-building processes: *Pan-Pacific Sci. Cong., Australia, 1923, Proc.*, vol. 2, pp. 1120–1128, 2 figs [1924].
21. De Montessus de Ballore: *Seismol. Soc. America, Bull.*, vol. 14, no. 3, pp. 177–180, September, 1924.
22. The unstable middle section of the island arcs: *Geologisch-Minjbouwkundig Genootschap voor Nederland en Kolonien, Verh.*, *Geol. ser.*, D. 8 (Gedenkboek . . . Dr. R. D. M. Verbeek), pp. 219–261, 19 figs., 4 pls., 1925.
23. The trough-deeps of the island arcs: *International Geol. Cong.*, 13th Sess., Belgium, 1922, fasc. 2, pp. 725–730, 5 figs., 1925.
24. [Review of] Movement of continental masses under action of tidal forces, by F. B. Taylor: *Jour. Geology*, vol. 33, no. 7, pp. 751–752, October–November, 1925.
25. The glacial anticyclones; the poles of the atmospheric circulation: *Michigan, Univ., Studies, Sci. ser.*, vol. 4, 198 pp., 53 figs., 3 pls., New York, The Macmillan Company, 1926.
26. The cause of earthquakes; especially those of eastern United States: *Michigan Acad. Sci., Papers*, vol. 5, pp. 257–282, 5 figs., 1926; *Smithsonian Inst., Ann. Rept.*, 1926, pp. 257–277, 5 figs., 1927; abstract, *Pan-Am. Geologist*, vol. 44, no. 2, p. 160, September, 1925.

Hobbs, William Herbert—Continued.

27. Plans of the University of Michigan expedition to Greenland in 1926-27 (abstract) : *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 144, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 1, p. 92, February, 1926.
28. James Hutton, the pioneer of modern geology : *Science, new ser.*, vol. 64, pp. 261-265, September 17, 1926.
29. The first Greenland expedition of the University of Michigan : *Geog. Rev.*, vol. 17, no. 1, pp. 1-35, 33 figs., January, 1927.
30. Two glaciations within the land-ribbon surrounding the inland ice of Greenland (abstract) : *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 212, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 4, pp. 314-315, April, 1927.
31. Glacial history of southwestern Greenland (abstract) : *Pan-Am. Geologist*, vol. 49, no. 2, p. 149, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 220-221, March 30, 1928.
32. The poles of the atmospheric circulation (abstract) : *Washington Acad. Sci., Jour.*, vol. 18, no. 10, pp. 283-284, May 19, 1928.

Hobson, G. V.

1. Mica and its international relationships : Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, *Proc.*, pt. 1, pp. 140-187 11 figs., 1 pl. (map), 1928.

Hodge, Edwin Thomas.

1. The geology of the Coamo-Guayama district, Porto Rico : *Scientific Survey of Porto Rico and the Virgin Islands*, vol. 1, pt. 2, pp. 111-228, 50 figs., map, *New York Acad. Sci.*, 1920.
2. Proposed quantitative and mineralogical classification of igneous rocks (abstract) : *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 164-165, March 30, 1924.
3. A proposed classification of igneous rocks : *Oregon, Univ., Pub.*, vol. 2, no. 7, 72 pp., 16 figs., November, 1924.
4. Quantitative mineralogical and chemical classification of igneous rocks (abstract) : *Pan-Am. Geologist*, vol. 43, no. 5, pp. 374-375, June, 1925.
5. Mount Multnomah, ancient ancestor of the Three Sisters : *Oregon, Univ., Pub.*, vol. 3, no. 2 [vol. 2, no. 10], 160 pp., 94 figs., map, August 1, 1925.
6. Geology of Mount Jefferson [Oregon] : *Mazama, Ann. Ser.*, vol. 7, no. 2, pp. 25-58, 5 figs., map, December, 1925.
7. Practical classification of igneous rocks : *Pan-Am. Geologist*, vol. 46, no. 1, pp. 25-48, 5 figs., 1 pl., August, 1926.
8. Composition and structure of the Cascade Mountains in central Oregon (abstract) : *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 162-163, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 2, p. 157, March, 1927.
9. Mineralogic and chemical classification of igneous rocks (abstract) : *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 204, March 30, 1927.
10. Geology of the Oregon Cascades (abstract) : *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 204-205, March 30, 1927.
11. A quantitative mineralogical and chemical classification of igneous rocks : *Oregon, Univ., Pub., Geology ser.*, vol. 1, no. 2, pp. 133-200, 8 figs., March, 1927.
12. Native asphalts in Oregon : *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 4, pp. 395-406, April, 1927.

Hodge, Edwin Thomas—Continued.

13. Structural features in John Day and Deschutes River canyons (abstract) : Pan-Am. Geologist, vol. 49, no. 4, pp. 305–306, May, 1928.
14. Framework of Cascade Mountains in Oregon : Pan-Am. Geologist, vol. 49, no. 5, pp. 341–356, 2 pls., June, 1928.

Hodge, James Michael.

1. Coals of Middle Fork of Kentucky River in Leslie and Harlan counties : Kentucky Geol. Survey, 166 pp., 1918.
2. Coals of the north fork of Kentucky River in Perry and portions of Breathitt and Knott counties [Kentucky] : Kentucky Geol. Survey, Fourth ser., vol. 3, pt. 3, 418 pp., 5 maps, 1918.
3. The coals of Goose Creek and its tributaries [Clay County] : Kentucky Geol. Survey, Fourth series, vol. 4, pt. 3, pp. 1–183, 1918.

Hodgson, Ernest A.

1. Location of epicenters [of earthquakes], 1917–18 : Canada, Dept. Interior, Dominion Observatory, Ottawa, Pub., vol. 5, no. 4, pp. 89–124, 1921.
2. Variable velocity of L waves : Seismol. Soc. America, Bull., vol. 11, no. 1, pp. 58–62, 2 figs., March, 1921.
3. Three remarkable earthquakes in 1918 : Seismol. Soc. America, Bull., vol. 11, no. 2, pp. 131–133, 1 pl., June, 1921.
4. Temperature control of the vertical seismograph at the Dominion Observatory, Ottawa : Seismol. Soc. America, Bull., vol. 11, no. 2, pp. 134–135, June, 1921.
5. A proposed research into the possibilities of earthquake prediction : Seismol. Soc. America, Bull., vol. 13, no. 3, pp. 100–104, September, 1923.
6. System for recording seismologic data at the Dominion Observatory, Ottawa, Canada : Seismol. Soc. America, Bull., vol. 14, no. 4, pp. 265–273, 1 fig., 2 pls., December, 1924.
7. The recording of seismologic data at the Dominion Observatory, Ottawa, Canada : Union géodésique et géophysique internationale, Section de séismologie, Ser. A, fasc. no. 2, pp. 89–120, Paris, 1925.
8. The St. Lawrence earthquake, February 28, 1925 : Seismological Soc. America, Bull., vol. 15, no. 2, pp. 84–90, 16 figs., June, 1925.
9. The rotation effects of the St. Lawrence earthquake of February 28, 1925 : Royal Astronomical Soc. Canada, Jour., vol. 19, no. 6, pp. 169–178, 1 fig., October, 1925.
10. Hypothesis correlating data collected with reference to St. Lawrence earthquake of February 28, 1925 (abstract) : Pan-Am. Geologist, vol. 45, no. 2, pp. 172–173, March, 1926.
11. Seismology in Canada (abstract) : Seismological Soc. America, Bull., vol. 16, no. 2, pp. 153–154, June, 1926.
12. Minute cooling effects revealed by the seismograph : Nat. Research Council, Bull., no. 56 (vol. 11, pt. 2), pp. 64–65, November, 1926.
13. Seismology in Canada : Canada Yearbook, 1925, pp. 30–31, Canada, Dominion Bureau of Statistics, General Statistics Branch, Ottawa, 1926.
14. The St. Lawrence earthquake, February 28, 1925 : Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 145–152, May, 1927; abstract, p. xcv, 1927.

Hodgson, Ernest A.—Continued.

15. Report of progress in seismological work in Canada; the seismological work of the Dominion Observatory, Ottawa: Nat. Research Council, Bull. no. 61, pp. 79-88, July, 1927.
16. Bibliography of seismology: Seismological Soc. America, Bull., vol. 17, no. 3, pp. 149-182, September; no. 4, pp. 218-248, December, 1927; vol. 18, no. 1, pp. 16-63, March, 1928.

Hodson, Floyd.

1. (and Hodson, Helen K.). Short cuts in picking out and sectioning Foraminifera: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 11, pp. 1173-1174, November, 1926.
2. The origin of bedded Pennsylvanian fire clays in the United States: Am. Ceramic Soc., Jour., vol. 10, no. 9, pp. 721-746, 1 fig., September, 1927.

Hodson, Helen K. See also Hodson, Floyd, 1.

1. Names for the stellate "*Orthophragmina*": Am. Jour. Sci., 5th ser., vol. 12, pp. 353-354, October, 1926.
2. Foraminifera from Venezuela and Trinidad: Bull. Am. Paleontology, vol. 12, no. 47, 46 pp., 8 pls., December 24, 1926.

Hoffman, Frederick L.

1. Earthquake hazards and insurance. 169 pp., New York, The Spectator Company, 1928.

Hoffman, Malvin G.

1. Volcanic tuffs in central Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, p. 344, March-April, 1925.
2. Veining along faults in the Pennsylvanian sandstones in Oklahoma: Jour. Geology, vol. 34, no. 1, pp. 83-84, January-February, 1926.

Hoffman, Ralph.

1. The finding of Pleistocene material in an asphalt pit at Carpinteria, California: Science, new ser., vol. 66, p. 155, August 12, 1927.

Hoffman, Robert. See Wandke, 4.

Hoffman, W.

1. Die Braunkohlenlager der Vereinigten Staaten von Nordamerika und den Stand ihrer Ausnutzung: Braunkohle, Jahrg. 26, H. 32, pp. 729-733, H. 33, pp. 760-766, 6 figs., November 5 and 12, 1927.

Hoffmeister, John Edward. See Vaughan, 36, 37; Wentworth, 33.

Hohl, C. D. See Broderick, 4.

Holbrook, Elmer Allen.

1. (and Nelson, Wilbur A.). The coal pyrite resources of Tennessee and tests on their availability: Tennessee State Geol. Survey, Resources of Tennessee, vol. 9, no. 1, pp. 60-70, January, 1919. Coal Age, vol. 15, pp. 1077-1079, June 12, 1919.

Holden, Edward Fuller, 1901-1925. See also Kraus, 5.

1. Limonite pseudomorphous after pyrite from York County, Pennsylvania: Am. Mineralogist, vol. 4, no. 6, pp. 68-69, June, 1919.
2. An American occurrence of sarcopside [Deering, New Hampshire]: Am. Mineralogist, vol. 5, no. 5, pp. 99-102, May, 1920.
3. A calcium phosphate with ratios between those of triplite and sarcopside: Am. Mineralogist, vol. 5, no. 9, p. 166, September, 1920.

Holden, Edward Fuller—Continued.

4. Specific gravity and composition in iron-rutile: *Am. Mineralogist*, vol. 6, no. 6, pp. 100–103, 1 fig., June, 1921.
5. A study of the constitution of thaumasite: *Am. Mineralogist*, vol. 7, no. 1, pp. 12–14, January, 1922.
6. Ceruleofibrite, a new mineral [Bisbee, Arizona]: *Am. Mineralogist*, vol. 7, no. 5, pp. 80–83, 1 fig., May, 1922.
7. The color of three varieties of quartz: *Am. Mineralogist*, vol. 8, no. 7, pp. 117–121, July, 1923.
8. "Ceruleofibrite" is connellite: *Am. Mineralogist*, vol. 9, no. 3, pp. 55–56, March, 1924.
9. The cause of color in rose quartz: *Am. Mineralogist*, vol. 9, no. 4, pp. 75–88, April, no. 5, pp. 101–108, May, 1924.
10. Further note on sarcopside: *Am. Mineralogist*, vol. 9, no. 10, pp. 205–207, October, 1924.
11. The transmission of light by citrine: *Am. Mineralogist*, vol. 10, no. 5, pp. 127–128, 1 fig., May, 1925.
12. The cause of color in smoky quartz and amethyst: *Am. Mineralogist*, vol. 10, no. 9, pp. 203–252, 5 figs., September, 1925.
13. Pigments of amethyst and smoky quartz (abstract): *Pan-Am. Geologist*, vol. 44, no. 2, pp. 158–159, September, 1925.
14. Hematite inclusions in the Lake Superior amethyst: *Michigan Acad. Sci., Papers*, vol. 5, pp. 283–285, 1 fig., 1926.

Holden, Roy Jay. See also Campbell, M. R., 6; Merwin, 6.

1. Notes on the Oriskany and Helderberg in Virginia (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 137, March 31, 1920.
2. Origin of Clinton hematite ores: *Econ. Geology*, vol. 20, no. 1, pp. 101–103, January–February, 1925.

Hole, Allen David.

1. Preliminary report on the molding sands of Indiana: *Indiana, Year Book* 1918, pp. 196–207, 1919.
2. Notes on the paleontology of certain Chester formations in southern Indiana: *Indiana Acad. Sci., Proc.* 1918, pp. 183–185, 1919.

Holland, L. F. S.

1. Meteor Mountain crater, Arizona: *Eng. and Min. Jour.-Press*, vol. 119, no. 6, pp. 253–254, February 7, 1925.

Holland, William Jacob.

1. Charles Rochester Eastman: *Carnegie Mus., Annals*, vol. 12, nos. 2–4, pp. 346–352, portr., October, 1919.
2. Description of the type of *Uintasaurus douglassi* Holland: *Carnegie Mus., Annals*, vol. 15, nos. 2 and 3, pp. 119–138, 7 figs., 5 pls., July, 1924.
3. The skull of *Diplodocus*: *Carnegie Mus., Mem.*, vol. 9, no. 3, pp. 379–403, 11 figs., 4 pls., November, 1924.
4. Obituary, Jacob L. Wortman: *Carnegie Mus., Annals*, vol. 17, no. 2, pp. 199–201, May, 1927.

Hollick, Arthur. See also Howe, 3; Science Service, 1.

1. Some botanical problems that paleobotany has helped to solve: *Brooklyn Botanic Garden, Mem.*, vol. 1, pp. 187–190, July 6, 1918.
2. The taxonomic and morphologic status of *Ophioglossum allenii* Lesquereux: *Torrey Bot. Club, Bull.*, vol. 50, no. 6, pp. 207–213, 3 pls., June, 1923.
3. Cycads, living and extinct: *New York Bot. Garden, Jour.*, vol. 24, no. 283, pp. 135–140, 1 fig., July, 1923.

Hollick, Arthur—Continued.

4. A review of the fossil flora of the West Indies, with descriptions of new species: New York Bot. Garden, Bull., vol. 12, no. 45, pp. 259-323, 1 fig., 15 pls., September 13, 1924.
5. A new fossil species of *Hydrangea* [Tertiary, Alaska Peninsula]: Torrey Bot. Club, Bull., vol. 52, no. 1, pp. 21-22, 1 pl., January, 1925.
6. Paleobotanical exploration in Porto Rico: New York Bot. Garden, Jour., vol. 27, no. 317, pp. 102-104, May, 1926.
7. Report on a tree trunk and associated lignitic debris excavated in Manhattan Island [New York]: Am. Mus. Novitates, no. 213, 6 pp., 2 figs., May 6, 1926.
8. Fossil walnuts and lignite from Porto Rico: New York Bot. Garden, Jour., vol. 27, no. 322, pp. 223-227, 1 fig., October, 1926.
9. Records of glaciation in the New York Botanical Garden: New York Bot. Garden, Jour., vol. 27, no. 324, pp. 269-278, 7 figs., December, 1926.
10. The flora of the St. Eugene silts, Kootenay Valley, British Columbia: New York Bot. Garden, Mem., vol. 7, pp. 389-464, 1 fig., 19 pls., March 1, 1927.
11. Report of the paleobotanist: New York Bot. Garden, Bull., vol. 13, no. 48, pp. 217-218, June 8, 1927.
12. Paleobotany of Porto Rico: New York Acad. Sci., Scientific Survey of Porto Rico and the Virgin Islands, vol. 7, pt. 3, pp. 173-393, 38 pls., October 31, 1928.
13. The story of the redwoods: New York Bot. Garden, Jour., vol. 29, no. 347, pp. 281-282, November, 1928.

Holman, E.

1. (and Campbell, R. B.). The Bellevue oil field, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 6, pp. 645-652, 1 fig., November-December, 1923.

Holmes, Arthur.

1. The basaltic rocks of the Arctic region: Mineral. Mag., vol. 18, pp. 180-223, 2 pls., August, 1918.
2. (and Lawson, Robert W.). Factors involved in the calculation of radioactive minerals: Am. Jour. Sci., 5th ser., vol. 13, pp. 327-244, April, 1927.

Holmes, Grace B.

1. A bibliography of the conodonts with descriptions of early Mississippian species: U. S. Nat. Mus., Proc., vol. 72, art. 5, 38 pp., 11 pls., 1928.

Holmes, William Henry.

1. The antiquity phantom in American archeology [antiquity of artifacts from Melbourne, Florida]: Science, new ser., vol. 62, pp. 256-258, September 18, 1925.

Holtedahl, Olaf.

1. Summary of geological results. Second Norwegian Arctic Expedition in the *Fram*, 1898-1902, Rept. No. 36, 27 pp., 6 pls., 4 figs., map, Videnskabs-Selskabet i Kristiania, 1917.
2. Paleogeography and diastrophism in the Atlantic-Arctic region during Paleozoic time: Am. Jour. Sci., 4th ser., vol. 49, pp. 1-25, 12 figs., January, 1920.

Holtedahl, Olaf—Continued.

3. On the rock formations of Novaya Zemlya, with notes on the Paleozoic stratigraphy of other Arctic lands: Report of the scientific results of the Norwegian Expedition to Novaya Zemlya 1921, no. 22, 183 pp., 44 pls., Videnskapsselskapet i Kristiania, 1924.
4. Some points of structural resemblance between Spitsbergen and Great Britain, and between Europe and North America: Norske Videnskaps-Akademi i Oslo, Avhandl., Mat.-Nat. Kl., 1925, no. 4, 20 pp., 5 figs., 1925.
5. Tectonics of Arctic regions: Pan-Am. Geologist, vol. 46, no. 4, pp. 257-272, 3 figs., 2 pls., November, 1926.

Holtz, H. C. See Howe, J. L., 1.

Holway, Ruliff Stephen.

1. Stream and ocean terraces in relation to recent earth movements (abstract): Assoc. Am. Geographers, Annals, vol. 11, pp. 125-126 [1922?].

Holzwasser, Florrie.

1. Geology of Newburgh and vicinity: New York State Mus. Bul. no. 270, 95 pp., 12 figs., 39 pls., map and section sheet, 1926.

Honess, Arthur Pharaoh.

1. The etching figures of topaz: Am. Mineralogist, vol. 6, no. 4, pp. 71-77, 1 fig., 1 pl., April, 1921.
2. Some interesting chalcedony pseudomorphs from Big Badlands, South Dakota: Am. Jour. Sci., 5th ser., vol. 5, pp. 173-174, February, 1923.
3. (and Graeber, C. K.). A new occurrence of an igneous dike in southwestern Pennsylvania: Am. Jour. Sci., 5th ser., vol. 7, pp. 313-315, April, 1924.
4. (and Graeber, C. K.). Petrography of the mica peridotite dike at Dixonville, Pennsylvania: Am. Jour. Sci., 5th ser., vol. 12, pp. 484-494, 6 figs., December, 1926.
5. The nature, origin, and interpretation of the etch figures on crystals. xiii, 171 pp., 95 figs., New York, John Wiley & Sons, 1927.

Honess, Charles William. See also Miser, 29.

1. Structural features of the southern Ouachita Mountains, Oklahoma (abstract with discussion by H. D. Miser): Geol. Soc. America, Bull., vol. 31, no. 1, pp. 121-122, March 31, 1920.
2. The Stanley shale of Oklahoma: Am. Jour. Sci., 5th ser., vol. 1, no. 1, pp. 63-80, 1 fig., January, 1921.
3. Field work in the Ouachita Mountains: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 6, p. 679, November-December, 1921.
4. Geology of the southern Ouachita Mountains of Oklahoma; Part I, Stratigraphy, structure, and physiographic history, 278 pp., 6 figs., 92 pls. (incl. map); Part II, Geography and economic geology, 76 pp., 3 figs., 28 pls.: Oklahoma Geol. Survey, Bull. 32, Norman, April, 1923.
5. Geology of southern Leflore and northwestern McCurtain counties, Oklahoma: Bureau of Geology, Norman, Oklahoma, Circular no. 3, 23 pp., 2 figs., 5 pls. (incl. map), Norman, January, 1924.
6. Oil and gas in Oklahoma; geology of Atoka, Pushmataha, McCurtain, Bryan, and Choctaw counties: Oklahoma Geol. Survey, Bull., no. 40-R, 32 pp., 3 figs., November, 1927.

Honigmann, Ernesto.

1. La región minera al norte-orienté del mineral de La Colorada, Sonora [México]: Bol. minero, t. 14, no. 1, pp. 15-24, July, 1922.
2. Las minas abandonadas "El Promontorio" y "La Cueva," Hermosillo, Sonora [México]: Bol. minero, t. 14, no. 1, pp. 24-28, 3 pls., July, 1922.
3. La mina de "La Turquesa," San José de Guaymas, Sonora [México]: Bol. minero, t. 14, no. 1, pp. 28-34, July, 1922.
4. La industria del grafito en el Estado de Sonora: Bol. minero, t. 20, no. 2, pp. 49-60, August, 1925.
5. La Cía. minera San José, S. A., municipalidad de La Colorada, distrito de Hermosillo, Sonora: Bol. minero, t. 20, no. 2, pp. 60-67, August, 1925.
6. Las minas del Cerro Colorado, municipalidad de San Marcial, distrito de Guaymas, Sonora: Bol. minero, t. 20, no. 2, pp. 67-73, August, 1925.

Hood, O. P. See Odell, 1.

Hoots, Harold William. See also Dobbin, 5.

1. Geology of a part of western Texas and southeastern New Mexico, with special reference to salt and potash (preface by J. A. Udden): U. S. Geol. Survey, Bull. 780, pp. 33-126, 1 fig., 15 pls. (incl. maps), 1925.
2. Geologic features of the southern end of the San Joaquin Valley, California (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, pp. 123-124, March 4, 1927.
3. Heavy-mineral data at the southern end of San Joaquin Valley [California]: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 4, pp. 369-372, April, 1927.
4. Oil possibilities at Comanche Point and near Wheeler Ridge, California: Oil Age, vol. 24, no. 4, p. 19, April, 1927; Petroleum World, Los Angeles, vol. 12, no. 4, p. 98, April, 1927.
5. Geology of the Wheeler Ridge area, Kern County, California (abstract): Stanford Univ., Abstracts of Dissertations, 1924-1926, vol. 1, pp. 135-137, June, 1927.
6. Oil possibilities and survey of oil and gas exploration in southwestern Humboldt County, California: Oil Age, vol. 25, no. 3, pp. 29-31, 79, 1 fig., March, 1928.
7. Oil and gas exploration in southwestern Humboldt County, California. [U. S.], Department of the Interior, Memorandum for the Press, release date March 5, 1928. 9 pp. (mimeographed), 1 pl. (geol. map and sections).

Hoover, Herbert Clark.

1. Some notes on crossings [North Star mine, Grass Valley, California]: Min. and Sci. Press, vol. 120, pp. 743-744, 5 figs., May 22, 1920 (reprinted from vol. 72, pp. 166-167, February 29, 1896).

Hopkins, Oliver Baker. See also Powers, 12; Redwood, 1.

1. (and Powers, Sidney). Structure and oil and gas resources of the Osage Reservation, Oklahoma; T. 24 N., R. 11 and 12 E.: U. S. Geol. Survey, Bull. 686, pp. 237-253, 4 pls. (incl. map), 1919.
2. (and Powers, Sidney, and Robinson, H. M.). The structure of the Madill-Denison area, Oklahoma and Texas, with notes on oil and gas development: U. S. Geol. Survey, Bull. 736, pp. 1-33, 6 pls. (incl. maps), June 6, 1922.

Hopkins, Oliver Baker—Continued.

3. Some structural features of the plains area of Alberta caused by Pleistocene glaciation: *Geol. Soc. America, Bull.*, vol. 34, no. 3, pp. 419–430, 10 figs., September 30, 1923.
4. Oil and gas development in the foothills belt of Alberta and British Columbia: *Canadian Inst. Min. and Met., Trans.*, vol. 30, pp. 626–640, 3 figs. [1928]; *Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc.*, pt. 3, pp. 110–124, 3 figs., 1928.

Hopkins, Percy Eugene. See also Burrows, 4, 8, 9, 12; Knight, C. W., 1.

1. Larder Lake gold area: *Ontario Bur. Mines, 28th Ann. Rept.*, vol. 28, pt. 2, pp. 71–77, 3 figs., 1919. *Canadian Min. Jour.*, vol. 40, pp. 68–71, 3 figs., February 5, 1919.
2. West Shiningtree gold area: *Ontario Dept. Mines, 29th Ann. Rept.*, vol. 29, pt. 3, pp. 28–52, 16 figs., map, 1920. Reprinted as *Bull.* 39, 26 pp., 1920.
3. Ontario gold deposits; their character, distribution, and productiveness: *Ontario Dept. Mines, 30th Ann. Rept.*, vol. 30, pt. 2, 73 pp., figs., and pls. (including maps), 1922.
4. Ontario gold deposits; their character, distribution, and productiveness: *Canadian Inst. Min. and Met., Monthly Bul.*, no. 118, pp. 173–188, February, 1922; *Trans.*, vol. 25, pp. 32–47, 1 fig. [1923].
5. Schreiber-Duck Lake area [Ontario]: *Ontario Dept. Mines, 30th Ann. Rept.*, vol. 30, pt. 4, pp. 1–26, illus., 1922.
6. The Kirkland Lake gold area, Ontario: *Mining and Metallurgy*, vol. 4, no. 200, pp. 392–394, 2 figs., August, 1923.
7. Lebel and Gauthier townships (area between Kirkland and Larder lakes): *Ontario Dept. Mines, 32d Ann. Rept.*, vol. 32, pt. 4, pp. 53–88, illus., map, 1925.
8. Larder Lake gold area: *Ontario Dept. Mines, 33d Ann. Rept.*, pt. 3, pp. 1–26, 14 figs., 1 pl., map, 1925.
9. Night Hawk Lake gold area: *Ontario Dept. Mines, 33d Ann. Rept.*, vol. 33, pt. 3, pp. 27–36, 5 figs., map, 1925.
10. Notes on gold in McNeil and other townships: *Ontario Dept. Mines, 33d Ann. Rept.*, vol. 33, pt. 3, pp. 37–40, 3 figs., 2 pls. (maps), 1925.
11. The Costello gold deposit at Pancake Lake [Ontario]: *Canadian Min. Jour.*, vol. 46, no. 25, pp. 601–604, 3 figs., June 19, 1925.

Hopwood, Arthur T.

1. A fossil rice-rat from the Pleistocene of Barbuda [West Indies]: *Ann. and Mag. Nat. Hist.*, 9th ser., vol. 17, pp. 328–330, 1 pl., March, 1926.

Hore, Reginald Edwin. See also Bruce, 18; Tyrrell, 7, 9.

1. The Wasapika gold area [Sudbury district, Ontario]: *Canadian Min. Jour.* vol. 40, pp. 490–501, 30 figs., July 9, 1919.
2. The Huntingdon copper mine [Eastman], Quebec: *Canadian Min. Jour.*, vol. 40, pp. 582–584, 4 figs., August 6, 1919.
3. Recent developments in Wasapika gold area [Sudbury district, Ontario]: *Canadian Min. Jour.*, vol. 40, pp. 677–678, September 10, 1919.
4. Some notes on ores and rocks of Wasapika gold area [Sudbury district, Ontario]: *Canadian Min. Jour.*, vol. 40, pp. 749–750, October 7, 1919.
5. A new gold field in Ontario [Wasapika area, Sudbury mining division]: *Min. and Sci. Press*, vol. 119, pp. 595–596, 1 fig., October 25, 1919.

Hore, Reginald Edwin—Continued.

6. The pitchblende deposit in Butte township, Nipissing district, Ontario: Canadian Min. Jour., vol. 40, pp. 830-831, 4 figs., November 5, 1919.
7. Country rocks of Elliott pitchblende deposits [Butte township, Ontario]: Canadian Min. Jour., vol. 40, no. 50, p. 948, December 17, 1919.
8. Porcupine, premier gold district of northern Ontario: Eng. and Min. Jour.-Press, vol. 115, no. 8, pp. 359-363, 8 figs., February 24, 1923.
9. The Rouyn-Boischatel gold area, Temiskaming County, Quebec: Canadian Min. Jour., vol. 45, no. 31, pp. 745-748, 5 figs., August 1, 1924.
10. Willet G. Miller: Mining and Metallurgy, vol. 6, no. 219, pp. 160-161, March, 1925.

Hoskin, Arthur Joseph.

1. The winning of oil from rocks: Min. and Sci. Press, vol. 118, pp. 701-707, 10 figs., May 24, 1919.

Hoskins, J. Hobart.

1. A Paleozoic angiosperm from an American coal ball: Bot. Gazette, vol. 75, no. 4, pp. 390-399, 7 figs., 1 pl., June, 1923.
2. Structure of Pennsylvanian plants from Illinois: Bot. Gazette, vol. 82, no. 4, pp. 427-437, 2 pls., December, 1926.
3. Notes on the structure of Pennsylvanian plants from Illinois, II: Bot. Gazette, vol. 85, no. 1, pp. 74-82, 7 figs., 1 pl., March, 1928.
4. Structure of some Carboniferous plants from Illinois: Indiana Acad. Sci., Proc., vol. 37, pp. 373-376, 1928.

Hosted, Joseph O. See also Wright, L. B., 1.

1. (and Wright, L. B.). Geology of the Homestake ore bodies and the Lead area of South Dakota: Eng. and Min. Jour.-Press, vol. 115, nos. 18 and 19, pp. 783-799, 836-843, 21 figs., May 5 and 12, 1923.

Hosterman, J. F.

1. The Tonkawa oil and gas field, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 3, pp. 284-300, 3 figs., May-June, 1924.

Hostetter, J. C. See Merwin, 2.

Hotchkiss, William Otis. See also Allen, R. C., 2.

1. Geology of the Gogebic Range and its relation to recent mining developments: Eng. and Min. Jour., vol. 108, pp. 443-452, 501-507, 537-541, 577-582, 35 figs., September 13, 20, and 27 and October 4, 1919.
2. Report of the director of the survey: Twelfth biennial report of the Commissioners of the Geological and Natural History Survey covering the period from July 1, 1918, to June 30, 1920. 37 pp. 2 figs., Madison, Wisconsin, 1920.
3. Exploration methods on the Gogebic range: Am. Inst. Min. and Met. Eng., Trans., vol. 68, pp. 287-293, 1923; [preprint] no. 995, 7 pp. 1920; abstract, Mining and Metallurgy, no. 163, pp. 29-30, July 1910.
4. Report of the director of the survey: Wisconsin, Geol. and Nat. Hist. Survey, 13th Bienn. Rept. of the Commissioners, 37 pp., 3 figs. 1922.
5. Magnetic methods for exploration and geologic work: Am. Inst. Min. and Met. Eng., Trans., vol. 69, pp. 36-47, 3 figs., 1923; [preprint] no. 1232, 12 pp., 3 figs., February, 1923; abstract, Mining and Metallurgy, vol. 4, no. 194, pp. 94-95, 1 fig., February, 1923.

Hotchkiss, William Otis—Continued.

6. Geology of the Baraboo gneiss deposits: *Am. Ceramic Soc., Jour.*, vol. 6, no. 11, pp. 1160–1166, 4 figs., November, 1923.
7. Recent developments in the geology of the Gogebic range (with discussion by A. C. Lane): *Lake Superior Min. Inst., 23d Ann. Meeting, Proc.*, vol. 23, pp. 47–55, 1923.
8. The Lake Superior geosyncline: *Geol. Soc. America, Bull.*, vol. 34, no. 4, pp. 669–678, December 30, 1923.
9. The Lake Superior geosyncline: *Lake Superior Min. Inst., Proc.*, 24th Ann. Meeting, vol. 24, pp. 140–148, 1925. (Reprinted from *Geol. Soc. America, Bull.*, vol. 34, 1923.
10. (and Bean, E. F.). A brief outline of the geology, physical geography, geography, and industries of Wisconsin: *Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 67*, 60 pp., 27 figs., 5 pls., 1925.

Hough, George A.

1. Notes on an unlisted mineral [cocinerite, Ramos, San Luis Potosi, Mexico]: *Am. Jour. Sci.*, 4th ser., vol. 48, p. 206, September, 1919.

Houghton, Douglas.

1. Geological reports of Douglas Houghton, first State geologist of Michigan 1837–1845, ed. by George N. Fuller. 700 pp., 7 pls. (incl. portr. and maps), Lansing, The Michigan Historical Commission, 1928.

Hovey, Edmund Otis, 1862–1924. See also Reeds, 5.

1. Proceedings of the thirty-first annual meeting of the Geological Society of America, held at Baltimore, Maryland, December 27 and 28, 1918: *Geol. Soc. America, Bull.*, vol. 30, pp. 1–142, 6 pls., March 31, 1919.
2. Proceedings of the thirty-second annual meeting of the Geological Society of America, held at Boston, Massachusetts, December 29–31, 1919: *Geol. Soc. America, Bull.*, vol. 31, pp. 1–176, 7 pls., March 31, 1920.
3. Proceedings of the thirty-third annual meeting of the Geological Society of America, held at Chicago, Illinois, December 28–30, 1920: *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 1–118, 1 pl., March 31, 1921.
4. Proceedings of the thirty-fourth annual meeting of the Geological Society of America, held at Amherst, Massachusetts, Wednesday–Friday, December 28–30, 1921: *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 1–186, 3 pls., March 31, 1922.
5. A tree fern of middle Devonian time [*Psaronius*, Schoharie County, New York]: *Natural History (Jour. Am. Mus. Nat. Hist.)*, vol. 22, no. 5, pp. 458–460, 3 figs., September–October, 1922.
6. Aerolite from Rose City, Michigan: *Am. Mus. Novitates*, no. 52, 7 pp., 3 figs., November 23, 1922.
7. A new meteorite from Michigan: *Natural History*, vol. 23, no. 1, pp. 87–88, January–February, 1923.
8. Aerolite from Rose City, Michigan (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 97, March 30, 1923.
9. Earthquakes: *Natural History*, vol. 23, no. 5, pp. 457–461, September–October, 1923.
10. The volcanic Caribbees: *Pan-Pacific Sci. Cong., Australia, 1923, Proc.*, vol. 1, pp. 836–837 [1924].
11. Geology of northwest Greenland and its relation to the flora, fauna, and people of the region: *Am. Jour. Sci.*, 5th ser., vol. 8, pp. 189–200, September, 1924.

Hovey, Edmund Otis—Continued.

12. A new meteoric stone from Johnstown, Weld County, Colorado; with supplemental notes by George P. Merrill and Earl V. Shannon: *Am. Mus. Novitates*, no. 203, 13 pp., 6 figs., November 30, 1925.

Howard, C. S. See Collins, 5.

Howard, Hildegarde.

1. A review of the fossil bird *Parapavo californicus* (Miller), from the Pleistocene asphalt beds of Rancho La Brea: California, Univ., Dept. Geol. Sci., Bull., vol. 17, no. 1, pp. 1-30, 13 pls., September 30, 1927.

Howard, L. O.

1. The Chewelah and Colville districts of northeastern Washington: *Mining and Metallurgy*, vol. 6, no. 222, pp. 271-278, 8 figs., June, 1925.

Howard, Waldorf Vivian. See also Bancroft, J. A., 1; Claypool, 1.

1. Some outliers of the Monteregian Hills [Quebec]: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 16, sec. 4, pp. 47-95, 1 pl., 1922.
2. Devonian volcanic rocks near Dalhousie, New Brunswick: *Geol. Soc. America, Bull.*, vol. 37, no. 3, pp. 475-496, 2 figs., September 30, 1926; abstract, no. 1, p. 152, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, pp. 158-159, March, 1926.
3. A classification of limestone reservoirs; *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 12, pp. 1153-1161, December, 1928.

Howe, Ernest.

1. The gold ores of Grass Valley, California (with discussion by A. M. Bateman, Waldemar Lindgren, J. E. Spurr, and the author): *Econ. Geology*, vol. 19, no. 7, pp. 595-622, 2 pls., November, 1924.

Howe, Henry Van Wagenen. See also Grimm, 1.

1. Correlation of the Empire formation, Oregon (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 147, March 31, 1921.
2. Faunal and stratigraphic relationships of the Empire formation, Coos Bay, Oregon: California, Univ., Dept. Geol. Sciences, Bull., vol. 14, no. 3, pp. 85-114, 6 pls., September 8, 1922.
3. The Arkadelphia formation; historical summary: Louisiana State Univ., Univ. Bull., new ser., vol. 16, no. 5, pt. 1, 10 pp., June, 1924.
4. The Arkadelphia formation, stratigraphy: Louisiana State Univ., Univ. Bull., new ser., vol. 16, no. 5, pt. 2, 17 pp., June, 1924.
5. The Nacatoch formation: Louisiana State Univ., Univ. Bull., new ser., vol. 16, no. 5, pt. 3, 25 pp., June, 1924.
6. Louisiana's mineral resources, past and present: *The South's Development, Manufacturers Record*, vol. 86, no. 24, pt. 2, pp. 378-381, December 11, 1924.
7. "The Many salt dome," Sabine Parish, Louisiana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 1, pp. 170-171, January-February 1925.
8. Extension of Midway formation into Louisiana: *Pan-Am. Geologist*, vol. 43, no. 4, p. 309, May, 1925.
9. Astoria, mid-Tertiary type of Pacific coast: *Pan-Am. Geologist*, vol. 45, no. 4, pp. 295-306, 1 pl. (map), May, 1926.
10. An observation on the range of the genus *Hantkenina*: *Jour. Paleontology*, vol. 2, no. 1, pp. 13-14, 2 figs., March, 1928.

Howe, Henry Van Wagenen—Continued.

11. Additions to the list of species occurring in the type Red Bluff clay, Hiwannee, Mississippi: Jour. Paleontology, vol. 2, no. 3, pp. 173-176, September, 1928.

Howe, James Lewis.

1. (and Holtz, H. C.). Bibliography of the metals of the platinum group; platinum, palladium, iridium, rhodium, osmium, ruthenium, 1748-1917: U. S. Geol. Survey, Bull. 694, 558 pp., 1919. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 10, no. 10, p. 301, May 19, 1920.

Howe, Marshall Avery.

1. Tertiary calcareous Algae from the islands of St. Bartholomew, Antigua, and Anguilla: Carnegie Inst. Washington, Pub. no. 291, pp. 9-19, 6 pls., 1919.
2. Two new Lithothamineae, calcareous algae, from the lower Miocene of Trinidad, British West Indies: U. S. Nat. Mus., Proc., vol. 62, art. 7, 3 pp., 4 pls., 1922.
3. (and Hollick, Arthur). A new American fossil hepatic [*Jungermanniopsis* from Florissant, Colorado]: Torrey Bot. Club., Bull., vol. 49, no. 7, pp. 207-209, 1 fig., July, 1922.
4. (and Goldman, Marcus I.). *Lithothamnium* (?) *ellisianum*, sp. nov., from the Jurassic Ellis formation of Montana: Am. Jour. Sci., 5th ser., vol. 10, pp. 314-324, 11 figs., October, 1925.

Howell, Benjamin Franklin.

1. Correlation of the middle Cambrian of Newfoundland and Great Britain (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 214, March 31, 1920.
2. *Oldhamia* in the Lower Cambrian of Massachusetts (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 198-199, March 31, 1922.
3. Gilbert Van Ingen (1869-1925): Science, new ser., vol. 62, pp. 101-103, July 31, 1925.
4. The faunas of the Cambrian *Paradoxides* beds at Manuels, Newfoundland: Bulletins of American Paleontology, vol. 11, no. 43, 140 pp., 3 pls., 7 tables, November 11, 1925.
5. The Cambrian-Ordovician stratigraphic column of southeastern Newfoundland: Canadian Field-Naturalist, vol. 40, no. 3, pp. 52-57, March, 1926.
6. Problematical fossil, possibly a fish plate, from the Cambrian *Paradoxides* beds of northwestern Vermont (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 236, March 30, 1926.
7. Cambrian *Paradoxides* beds in northwestern Vermont (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 242-243, March 30, 1926.
8. Discovery of two additional Cambrian faunas in New Brunswick (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 228, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 3, p. 236, April, 1927.
9. The finding of the St. Albans Cambrian "fish-plate": Vermont, State Geologist, 15th Rept., 1925-26, pp. 121-124, 1927.
10. [Marking of type specimens]: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 287-288, March 30, 1928.

Howell, Jesse V.

1. Twin Lakes district of Colorado [Lake and Pitkin counties]: Colorado Geol. Survey, Bull. 17, 108 pp., 27 figs., 2 pls. (maps), 1919.

Howell, Jesse V.—Continued.

2. Some structural factors in the accumulation of oil in southwestern Oklahoma: *Econ. Geology*, vol. 17, no. 1, pp. 15-33, 4 figs., January-February, 1922.
3. Notes on the pre-Permian Paleozoics of the Wichita Mountain area: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 5, pp. 413-425, 2 pls., September-October, 1922.
4. Petroleum and natural gas in Iowa: *Iowa Geol. Survey*, vol. 29, pp. 1-48, 4 pls. (incl. map) [1924].

Howell, R. W. See Wegemann, 1.

Howley, James Patrick.

1. Geological map of Newfoundland . . . Scale 1 inch=17 miles (about). Reprinted 1925.

Hoyt, Mary E.

1. Petroleum; a selected bibliography: *Colorado School of Mines, Quart.*, vol. 22, no. 2, 25 pp., April, 1927.

Hrdlička, Aleš.

1. Recent discoveries attributed to early man in America: *Bur. Am. Ethnology, Bull.* 66, 67 pp., 14 pls., 8 figs., 1918. [Includes an account of the Vero, Fla., remains.]
2. Antiquity of man in America in light of recent discoveries (abstract): *Pan-Am. Geologist*, vol. 42, no. 4, p. 319, November, 1924.
3. The peopling of the earth: *Am. Philos. Soc., Proc.*, vol. 65, no. 3, pp. 150-156, 1926.
4. The evidence bearing on man's evolution: *Smithsonian Inst., Ann. Rept.*, 1927, pp. 417-433, 1928.

Hubbard, Bela. See also Fettke, 2.

1. Tertiary Mollusca from the Lares district, Porto Rico: *New York Acad. Sci., Scientific Survey of Porto Rico and the Virgin Islands*, vol. 3, pt. 2, pp. 79-164, 16 pls. 1920.
2. The Tertiary formations of Porto Rico: *Science*, new ser., vol. 51, pp. 395-396, April 16, 1920. Abstract, *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 135, March 31, 1920.
3. The geology of the Lares district, Porto Rico: *New York Acad. Sci., Scientific Survey of Porto Rico and the Virgin Islands*, vol. 2, pt. 1, pp. 1-115, 42 figs., 4 pls., map, 1923.

Hubbard, George David. See also Jones, O. C., 1.

1. Concretions in lake deposits at Elyria, Ohio: *Ohio Jour. Sci.*, vol. 22, no. 3, pp. 97-98, January, 1922.
2. Colloids in geologic problems: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 95-110, August, 1922; *Chemical News*, vol. 125, pp. 390-395, December 29, 1922; vol. 126, pp. 6-9, January 5, 1923.
3. Biographical sketch of George Frederick Wright: *Ohio Acad. Sci., Proc.*, vol. 7, pt. 7, pp. 243-247, March 1, 1923.
4. Geology of a small tract in south central Vermont [Whitingham area]: *Vermont, State Geologist, Fourteenth Rept.*, 1923-1924, pp. 260-343, 6 figs., 8 pls. (incl. maps), 1924.
5. Dimensions of the Cincinnati anticline: *Ohio Jour. Science*, vol. 24, no. 3, pp. 161-166, 2 pls., May, 1924.
6. (and Croneis, Carey G.). Notes on the geology of Giles County, Virginia: *Denison Univ. Bull.*, vol. 24, no. 5, *Sci. Lab., Jour.*, vol. 20, pp. 307-377, 1 pl. (map), December, 1924.

Hubbard, George David—Continued.

7. (and Champion, Milton M.). Physiographic history of five river valleys in northern Ohio: *Ohio Jour. Sci.*, vol. 25, no. 2, pp. 51-84, March, 1925.
8. Sink-holes and springs near Bellevue, Ohio (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 226, March 30, 1928.
9. Quantitative vs. qualitative studies in geology (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, p. 170, 1928; *Ohio Jour. Sci.*, vol. 28, no. 3, p. 148, May, 1928.
10. Quantitative vs. qualitative studies in geology: *Science, new ser.*, vol. 68, pp. 171-174, August 24, 1928.
11. A plea for more quantitative studies in geology: *Eng. and Min. Jour.*, vol. 126, no. 14, pp. 537-539, October 6, 1928; *Queensland Govt. Min. Jour.*, vol. 29, pp. 528-529, December 15, 1928.

Hubbard, W. E.

1. (and Thompson, W. C.). The geology and oil fields of Archer County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 5, pp. 457-481, 6 figs., 1 pl., May, 1926.

Hubbard, Wyant D.

1. The Black Lake asbestos area [Quebec]: *Eng. and Min. Jour.*, vol. 112, no. 10, pp. 365-368, 6 figs., September 3, 1921.

Hubbert, M. King.

1. A suggestion for the simplification of fault descriptions: *Jour. Geology*, vol. 35, no. 3, pp. 264-269, 6 figs., April-May, 1927.
2. The direction of the stresses producing given geologic strains: *Jour. Geology*, vol. 36, no. 1, pp. 75-84, 4 figs., January-February, 1928.
3. (and Melton, Frank A.). Gravity anomalies and petroleum exploration by the gravitational pendulum: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 9, pp. 889-899, 6 figs., September, 1928.

Hubbs, Carl L.

1. Recent contributions to our knowledge of the fossil fishes of California: *Science, new ser.*, vol. 60, pp. 177-179, August 22, 1924.

Hudnall, James S. See also Eyl, 1; Kentucky Geol. Survey, 5, 8, 9, 10, 11, 12, 15, 16, 18, 21, 22.

1. The Elkhorn coal field: Kentucky Geol. Survey ser. 6, vol. 27, pp. 131-133, map, 1925.
2. Coals of Martin County: Kentucky Geol. Survey, ser. 6, vol. 26, pp. 209-228, 1 pl., 1927.
3. Marine invasions in eastern Kentucky in Pennsylvanian times: *Kentucky Acad. Sci., Trans.*, vol. 2, pp. 44-46, 1927.

Hudson, Frank Samuel.

1. Geology of the Cuyamaca region of California, with special reference to the origin of the nickeliferous pyrrhotite: California, Univ., Dept. Geol. Sciences, *Bull.*, vol. 13, no. 6, pp. 175-252, 7 figs, 6 pls., map, June 29, 1922.
2. The South Mountain oil field [Ventura County, California]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 6, pp. 810-820, 1 fig., November-December, 1924.
3. (and Taliaferro, N. L.). Calcium chloride waters from certain oil fields in Ventura County, California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 7, pp. 1071-1088, October, 1925.

Hudson, Frank Samuel—Continued.

4. (and Taliaferro, N. L.). An interesting example of a deep bore hole: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 8, pp. 775-785, 2 figs., August, 1926.
5. Occurrence of oil in basalt in southwestern Washington: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 1, pp. 87-88, January, 1927

Hudson, George Henry.

1. A preliminary paper concerning the fault systems of the northern Champlain Valley: Vermont, State Geologist, Thirteenth Rept., 1921-1922, pp. 87-92, 5 pls. (incl. maps), 1923.
2. The need of improved technique in illustration: Jour. Geology, vol. 33, no. 6, pp. 642-657, 1 fig., 4 pls., August-September, 1925.
3. The surface characteristics of *Astrocystites* (*Steganoblasus*) *ottawaensis*: Vermont, State Geologist, 15th Rept., 1925-26, pp. 97-110, 5 pls., 1927.

Huene, Friedrich von.

1. Reptilian and stegocephalian remains from the Triassic of Pennsylvania in the Cope collection: Am. Mus. Nat. Hist., Bull., vol. 44, pp. 561-574, 20 figs., December 27, 1921.
2. The Triassic reptilian order Thecodontia: Am. Jour. Sci., 5th ser., vol. 4, pp. 22-26, July, 1922.
3. Notes on the age of the continental Triassic beds in North America, with remarks on some fossil vertebrates: U. S. Nat. Mus., Proc., vol. 69, art. 18, 10 pp., 8 figs., 1926.

Huerta, Santiago de la. See Ortega, 1.

Huggins, Maurice L.

1. Crystal cleavage and crystal structure: Am. Jour. Sci., 5th ser., vol. 5, pp. 303-313, 7 figs., April, 1923.

Hughes, Richard.

1. Granite wells in central Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 3, p. 421, May-June, 1921.

Huguenin, Emile. See also Boalich, 1.

1. The minor oil fields of Kern County; Devils Den field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 9, no. 12, pp. 5-11, 1 pl. (map), June, 1924.
2. Inglewood oil field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 11, no. 12, pp. 5-15, 5 figs., 2 pls., June, 1926.

Hulin, Carlton D.

1. Mineralization in the vicinity of Randsburg, California: Eng. and Min. Jour.-Press, vol. 119, no. 10, pp. 407-411, 6 figs., March 7, 1925.
2. Mineralization in the Randsburg quadrangle, California (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 208, March 30, 1925.
3. Geology and ore deposits of the Randsburg quadrangle, California: California State Min. Bur., Bull. 95, 152 pp., 8 figs., 31 pls. (incl. map), 1925. Review by J. E. Spurr, Eng. and Min. Jour.-Press, vol. 121, no. 11, pp. 463-464, 2 figs., March 13, 1926.
4. Geology and mineralization at Pachuca, Mexico (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 310-311, May, 1928.

Hull, Joseph Poyer Deyo.

1. (and LaForge, Laurence, and Crane, W. R.). Report on the manganese deposits of Georgia: Georgia Geol. Survey, Bull. no. 35, 295 pp., 11 pls., 26 figs., 2 maps, Atlanta, 1919.
2. (and Teas, L. P.). A preliminary report on the oil prospect near Scotland, Telfair County, Georgia: Georgia Geol. Survey, 23 pp., 4 figs., map, 1919.
3. Report on the barytes deposits of Georgia: Georgia Geol. Survey, Bull. no. 36, 146 pp., 11 pls., 17 figs., 4 maps, 1920.
4. The Haynesville pool [Louisiana]: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 5, pp. 629-633, September-October, 1921.
5. (and Spooner, W. C.). A review of oil and gas pools in north Louisiana territory: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 3, pp. 179-192, 259 (note by Wallace E. Pratt), May-June, 1922.
6. The Bellevue [oil] pool, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 3, pp. 247-250, May-June, 1922.
7. Webster Parish gas fields, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 3, pp. 251-252, May-June, 1922.
8. Wildcat wells in south-central Arkansas stop short of deep oil sands: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 5, pp. 477-478, September-October, 1922.
9. El Dorado oil field in Arkansas not on an anticline: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 5, pp. 479-480, September-October, 1922.
10. Notes on the stratigraphy of producing sands in northern Louisiana and southern Arkansas (with discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 4, pp. 362-369, July-August, 1923.
11. Plans for compilation of Louisiana-Arkansas geology: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 3, pp. 350-351, May-June, 1924.
12. Guide notes on the Midway in southwestern Arkansas: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, pp. 167-170, January-February, 1925.
13. Prothro salt dome, Bienville Parish, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 5, pp. 904-906, August, 1925.
14. Discovery of Nigger Creek oil pool, Limestone County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 10, pp. 997-998, October, 1926.
15. The Denver meeting [of the American Association of Petroleum Geologists]: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 11, pp. 1178-1181, November, 1926.

Mume, George Sherwood. See also McLearn, 14.

1. The stratigraphy and geologic relations of the Paleozoic outlier of Lake Timiskaming: Am. Jour. Sci., 4th ser., vol. 50, pp. 293-309, 2 figs., (incl. map), October, 1920.
2. Great Slave Lake area [Mackenzie]: Canada, Geol. Survey, Summ. Rept., 1920, pt. B, pp. 30-36, 1921.
3. North Nahanni and Root rivers area and Caribou Island, Mackenzie River district: Canada, Geol. Survey, Summ. Rept., 1921, pt. B, pp. 67-78, 2 pls., 1922.
4. Norman oil fields, Mackenzie River area: Canadian Min. Jour., vol. 43, no. 48, pp. 816-817, December 1, 1922.

Hume, George Sherwood—Continued.

5. Geology of the Norman oil fields and a reconnaissance of a part of Liard River: Canada, Geol. Survey, Summ. Rept., 1922, pt. B, pp. 47-64, 2 pls., map, 1923.
6. A Kinderhook fauna from the Liard River, N. W. T., Canada: Am. Jour. Sci., 5th ser., vol. 6, pp. 48-52, 1 fig. (map), July, 1923.
7. Recent developments in the Fort Norman oil area [Mackenzie River]: Canadian Min. Jour., vol. 44, no. 48, pp. 939-940, 1 fig., November 30, 1923.
8. Mackenzie River area, district of Mackenzie, Northwest Territories: Canada, Geol. Survey, Summ. Rept., 1923, pt. B, pp. 1-15, 1 fig., 1 pl., map, 1924.
9. Clay deposits on Athabasca River, Alberta: Canada, Geol. Survey, Summ. Rept., 1923, pt. B, pp. 16-20, 1924.
10. The Wainwright oil and gas area, Alberta: Inst. Petroleum Technologists, Jour., vol. 10, no. 41, pp. 83-84, February, 1924; Canadian Chem. and Metal., vol. 8, no. 1, p. 21, January, 1924.
11. The oil situation and prospects in Canada: Inst. Petroleum Technologists, Jour., vol. 10, no. 41, pp. 84-86, February, 1924.
12. Liquid fuels in Canada (abstract): Pan-Am. Geologist, vol. 42, no. 1, pp. 75-76, August, 1924.
13. The Wainwright-Irma oil and gas area, Alberta: Canadian Min. Jour., vol. 45, no. 52, pp. 1259-1264, 4 figs., December 26, 1924.
14. The Paleozoic outlier of Lake Timiskaming, Ontario and Quebec: Canada, Geol. Survey, Mem. 145, 129 pp., 7 figs., 16 pls., 1925.
15. Oil developments and prospects in Canada, 1924: Canadian Inst. Min. and Met., Bull., no. 154, pp. 163-169, 1 fig. (map), February, 1925: Trans., vol. 28, pp. 222-230, 1 fig. [1926]; Inst. Petroleum Technologists, Jour., vol. 11, no. 51, pp. 411-417, August, 1925.
16. The Wainwright-Irma oil and gas area, Alberta: Inst. Petroleum Technologists, Jour., vol. 11, no. 49, pp. 201-202, April, 1925.
17. The search for oil in Alberta: Canadian Min. Jour., vol. 46, no. 52, pp. 1180-1182, 1 fig., December 25, 1925.
18. Ordovician and Silurian fossils from Great Slave Lake [Northwest Territories, Canada]: Canada, Geol. Survey, Bull. no. 44, pp. 59-64, 2 pls., 1926.
19. Oil and gas prospects of the Wainwright-Vermilion area, Alberta: Canada, Geol. Survey, Summ. Rept., 1924, pt. B, pp. 1-22, map, 1926.
20. Oil prospects in the vicinity of Battle River at the Alberta-Saskatchewan boundary: Canada, Geol. Survey, Summ. Rept. 1925, pt. B, pp. 1-13, map, 1926; Canadian Min. Jour., vol. 47, no. 15, pp. 393-395, 1 fig., April 9, 1926.
21. Notes on developments during 1925 in the Wainwright field, Alberta: Canada, Geol. Survey, Summ. Rept., 1925, pt. B, pp. 14-15, 1926.
22. Turner Valley oil area, Alberta: Canada, Geol. Survey, Summ. Rept., 1926, pt. B, pp. 1-14, map, 1927.
23. Oil and gas developments in Canada: Inst. Petroleum Technologists, Jour., vol. 13, no. 63, pp. 607-609, August, 1927.
24. Carbon ratios of coal as an index of oil and gas prospects in western Canada: Canadian Min. and Met. Bull., no. 179, pp. 325-345, March, 1927; Canadian Inst. Min. and Met., Trans., vol. 30, pp. 499-520, 1 fig. [1928].

Hume, George Sherwood—Continued.

25. Oil and gas prospects of the Great Plains of western Canada: Canadian Inst. Min. and Met., Trans., vol. 30, pp. 612–625, 1 fig. [1928]: Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc., pt. 3, p. 96–109, 1 fig., 1928.
26. Oil prospects of British Columbia: Canadian Inst. Min. and Met., Trans., vol. 30, pp. 641–645 [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc., pt. 3, pp. 125–129, 1928.
27. The Mackenzie River area: Canadian Inst. Min. and Met. Trans., vol. 30, pp. 671–679, 2 figs. [1928]; Second (Triennial) Empire Min. and Met. Congress, Canada, 1927, Proc., pt. 3, pp. 155–163, 2 figs., 1928.
28. Oil and gas in western Canada: Canada, Geol. Survey, Econ. Geol. ser., no. 5, 152 pp., 14 figs. (incl. maps), 1928. Extract, with title Physiography and stratigraphical geology of the Great Plains: Canadian Min. Jour., vol. 49, no. 43, pp. 875–877, 3 figs., October 26, 1928.
Includes sections contributed by M. Y. Williams, W. S. Dyer, and D. B. Dowling.
29. Developments of petroleum and natural gas in Canada: Inst. Petroleum Tech., Jour., vol. 14, no. 69, pp. 669–676, August, 1928.
30. Oil prospects near Bragg Creek, Alberta: Canada, Geol. Survey, Summ. Rept., 1927, pt. B, pp. 1–20, 3 figs., 1928.

Hummel, K.

1. Neuere amerikanische Ansichten über Erdöllagerstätten: Geol. Rundschau, Bd. 15, H. 1, pp. 52–75, May 20, 1924.
2. Development of ore deposit theories in Europe: Econ. Geology, vol. 20, no. 5, pp. 495–499, August, 1925.
3. Tourmaline-bearing cinnabar veins of the Mazatzal Mountains, Arizona: Econ. Geology, vol. 22, no. 4, pp. 407–408, June–July, 1927.

Humphreys, William Jackson.

1. Seismological reports [monthly]; Monthly Weather Review, vol. 47, 1919; vol. 48, 1920.
2. Earthquakes felt in the United States during 1919: Monthly Weather Review, vol. 47, p. 911, December, 1919.
3. Status and needs of seismology: Nat. Research Council, Bull., vol. 7, pt. 5, no. 41, pp. 52–54, January, 1924.
4. Some factors of climatic control (abstract): Pan-Am. Geologist, vol. 43, no. 5, pp. 378–379, June, 1925.
5. The origin of the ocean and the atmosphere: Nat. Research Council, Bull., vol. 11, pt. 2, no. 56, pp. 32–33, November, 1926; abstract, Am. Jour. Sci., 5th ser., vol. 12, pp. 272–273, September, 1926.

Hunt, Herbert A.

1. Agricultural aspects of rock weathering: Pan-Am. Geologist, vol. 42, no. 4, pp. 245–258, November, 1924.

Hunt, Richard N.

1. The ores in the limestones at Bingham, Utah: Am. Inst. Min. and Met. Eng., Trans., vol. 70, pp. 856–883, 9 figs., 1924; [preprint] no. 1323, 28 pp., 9 figs., March, 1924; abstract, Mining and Metallurgy, vol. 5, no. 212, pp. 392–393, August, 1924.

Hunt, S. Frank.

1. Cambrian rocks, structures, and ore deposits in Tintic mining district [Utah]: Min. Rev. (Salt Lake City, Utah), vol. 29, no. 21, pp. 13-15, February 15, 1928.

Hunt, Walter Fred. See also Kraus, 2, 8.

1. (editor). American Mineralogist; Journal of the Mineralogical Society of America. Vol. 7, nos. 1-12, January-December, 1922.
2. Assaying with the blowpipe; lead, copper, and silver ores: Am. Mineralogist, vol. 9, no. 7, pp. 145-150, July, 1924.
3. An improved Wentworth recording micrometer: Am. Mineralogist, vol. 9, no. 9, pp. 190-193, 2 figs., September, 1924.

Hunter, C. D. See Kentucky Geological Survey, 29.

Hunter, John Frederick, 1888-1917.

1. Pre-Cambrian rocks of Gunnison River, Colorado: U. S. Geol. Survey, Bull., 777, 94 pp., 5 figs., 15 pls. (incl. map), 1925.

Huntington, Ellsworth.

1. (and Visser, S. S.). Climatic changes, their nature and causes. 329 pp., 13 figs., New Haven, Yale University Press, 1922.
2. Earth and sun; an hypothesis of weather and sun spots. xxv, 296 pp., 53 figs., New Haven, Yale University Press, 1923.
3. Solar cyclonic explanation of glaciation: Pan-Am. Geologist, vol. 39 no. 1, pp. 25-42, February, 1923.
4. Problem of mild geological climates (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 81, March 30, 1923.
5. Environment and racial character. In Organic adaptation to environment, pp. 281-299, New Haven, Yale University Press, 1924.

Huntley, Louis Grow.

1. (and Huntley, Stirling). Mexican oil fields: Mining and Metallurgy, no. 177, pp. 27-32, 3 figs., September, 1921.
2. A graphic model of the Tepetate-Chinampa pool in the Mexican [oil] fields: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 6, pp. 677-679, 1 pl., November-December, 1921.
3. The Sabine uplift [Arkansas-Louisiana]: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 2, pp. 179-181, 2 figs., March-April, 1923.
4. Geological features illustrated by models: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 1, pp. 89-93, 3 figs., January-February, 1924.
5. Geological and archeological records of the Yucatan Peninsula: Science, new ser., vol. 68, pp. 264-265, September 21, 1928.

Huntley, Charles Stirling, 1895-1926. See also Johnson, R. H., 3.

1. Oil development on the Isthmus of Tehuantepec: Am. Inst. Min. and Met. Eng., Trans., vol. 69, pp. 1150-1166, 5 figs., 1923; [preprint] no. 1227, 17 pp., 5 figs., February, 1923; abstract, Mining and Metallurgy, vol. 4, no. 194, pp. 90-91, February, 1923.

Huntoon, Louis D.

1. Porcupine ore deposits [northern Ontario] (with discussion): Am. Inst. Min. and Met. Eng., Trans., vol. 69, pp. 48-59, 1923; [preprint] no. 1272, 6 pp., August, 1923; abstract, Mining and Metallurgy, vol. 4, no. 201, p. 480, September, 1923.

Hurst, Macleod Ewart.

1. Supergene processes at Neihart, Montana: *Econ. Geology*, vol. 17, no. 5, pp. 383-388, 2 pls., August, 1922.
2. Rock alteration and ore depositions at Telluride, Colorado: *Econ. Geology*, vol. 17, no. 8, pp. 675-702, 7 figs. December, 1922.
3. Tungsten deposits near Hazelton, British Columbia: Canada, Geol. Survey, Summ. Rept., 1924, pt. A, pp. 44-46, 1925.
4. Arsenic-bearing deposits in Canada: Canada, Geol. Survey, Econ. Geology Ser., no. 4, 181 pp., 21 figs., 1927. [Pub. no 2131].
5. The favourable Lake area [District of Patricia, Ontario]: *Canadian Min. Jour.*, vol. 49, no. 40, pp. 800-801, 1 fig. (map), October 5, 1928.

Hussakof, Louis.

1. (and Bryant, W. L.). Catalog of the fossil fishes in the museum of the Buffalo Society of Natural Sciences: *Buffalo Soc. Nat. Sci., Bull.*, vol. 12, 346 pp., 70 pls., 64 figs., 1918.
2. Structure of the head and dorsal armor of *Dinichthys pustulosus* Eastman: *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 245, March 30, 1926.

Hussey, Russell Cladius. See also Ehlers, 5.

1. The Richmond formation of Michigan: *Michigan, Univ., Mus. Geology, Contr.*, vol. 2, no. 8, pp. 113-187, 1 fig., 11 pls., July 15, 1926.
2. Contributions to the geology of Foxe Land, Baffin Island; Part III, Corals, brachiopods, gastropods, and ostracods from Putnam Highland: *Michigan, Univ., Mus. Paleontology, Contr.*, vol. 3, no. 3, pp. 71-76, 4 pls., November 10, 1928.
3. Cystoids from the Trenton rocks of Michigan: *Michigan, Univ., Mus. Paleontology, Contr.*, vol. 3, no. 4, pp. 77-79, 1 pl., November 10, 1928.

Hutton, J. G. See also Stone, 11.

Hyde, Jesse Earl.

1. Geology of Camp Sherman quadrangle: Ohio, Geol. Survey, Fourth series, *Bull.* 23, 190 pp., 18 figs., 20 pls., map, 1921.
2. Collecting fossil fishes from the Cleveland shale: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 26, no. 5, pp. 497-504, 10 figs., September-October, 1926.
3. The Mississippian system [of Vinton County]: Ohio, Geol. Survey, 4th ser., *Bull.* 31, pp. 43-64, 1927.
4. Fossil fishing in Cleveland shale: *Cleveland Mus. Nat. Hist., Pop. Pub.*, vol. 1, no. 1, 12 pp., 12 figs., November, 1928.

Hylander, C. J.

1. A mid-Devonian *Callixylon* [Eighteenmile Creek, New York]: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 315-321, 6 figs., October, 1922. Notice by G. R. Wieland, *Torreyia*, vol. 23, no. 2, pp. 32-33, March-April, 1923.

Ickes, E. L.

1. Similar, parallel, and neutral surface types of folding: *Econ. Geology*, vol. 18, no. 6, pp. 575-591, 9 figs., September, 1923.
2. The determination of formation thicknesses by the method of graphical integration: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 451-463, 3 figs., May-June, 1925.

Ickes, E. L.—Continued.

3. Origin of the faults in Creek and Osage counties, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 7, pp. 727-729, 1 fig., July, 1926.

Iddings, Joseph Paxson, 1857-1920.

1. Biographical memoir of Arnold Hague, 1840-1917: *Nat. Acad. Sci., Biog. Mem.*, vol. 9, pp. 21-38, portr., May, 1919.
2. Igneous rocks; composition, texture and classification, description and occurrence. In two volumes. Vol. 1 (second edition, revised), 465 pp., 3 pls., 22 figs., New York, John Wiley & Sons, 1920.
3. Relative densities of igneous rocks calculated from their norms: *Am. Jour. Sci.* 4th ser., vol. 49, pp. 363-366, May, 1920.
4. Louis Valentine Pirsson: *Science*, new ser., vol. 51, pp. 530-532, May, 28, 1920.

Iglesias, Carlos A.

1. Ensayo para determinar la extensión total probable del área que se puede considerar como petrolífera en la República, así como de las porciones ya exploradas [petroleum areas of Mexico]: *Bol. Petróleo*, vol. 5, no. 4, pp. 333-335, map, April, 1918.

Ihering, Hermann von.

1. Die Geschichte des Atlantischen Ozeans. vii, 237 pp., 9 pls., Jena, Gustav Fischer, 1927.

Illing, Vincent Charles.

1. Geology of the Naparima region of Trinidad, British West Indies: *Geol. Soc. London, Quart. Jour.*, vol. 84, pt. 1, pp. 1-56, 5 figs., 2 pls. (incl. map), April 30, 1928; abstract, *Abstracts of Proc.*, no. 1161, p. 50, February 10, 1927.

Illinois State Geological Survey.

1. Geologic map of Illinois. Scale 1:500,000 or 8 miles to 1 inch. 1917.
2. List of publications on the geology of Illinois, with appended index: *Illinois State Geol. Survey*, 44 pp., August 1, 1926.
3. [Map of the] Mineral industries of Illinois . . . 1927. Scale 1:500,000.

Imbeaux, Édouard.

1. Les grands bassins artésiens des États-Unis: *Acad. Sci. Paris, Compt. Rend.*, t. 179, pp. 726-729, 1 fig., October 20, pp. 799-802, October 27, 1924.

Ingall, Elfrie Drew.

1. Deep borings in British Columbia and the Yukon: *Canada, Geol. Survey, Summ. Rept.*, 1924, pt. A, pp. 145-148, 1925.
2. Deep borings in the prairie provinces and northwest territories: *Canada, Geol. Survey, Summ. Rept.*, 1924, pt. B, pp. 105-116, 1926.
3. Deep borings in Ontario, Quebec, and maritime provinces: *Canada, Geol. Survey, Summ. Rept.*, 1924, pt. C, pp. 240-246, 1926.
4. Deep borings in British Columbia and the Yukon: *Canada, Geol. Survey, Summ. Rept.*, 1925, pt. A, p. 233, 1926.
5. Deep borings in the prairie provinces and northwest territories: *Canada, Geol. Survey, Summ. Rept.*, 1925, pt. B, pp. 31-42, 1926.
6. Deep borings in Ontario, Quebec, and the maritime provinces: *Canada, Geol. Survey, Summ. Rept.*, 1925, pt. C, pp. 154-161, 1927.
7. Deep borings in the prairie provinces and northwest territories: *Canada, Geol. Survey, Summ. Rept.*, 1926, pt. B, pp. 43-52, 1927.

Ingall, Elfric Drew—Continued.

8. Deep borings in Ontario and maritime provinces: Canada, Geol. Survey, Summ. Rept., 1926, pt. C, pp. 125-132, 1927.
9. Deep borings in the prairie provinces and northwest territories: Canada, Geol. Survey, Summ. Rept., 1927, pt. B, pp. 81-91, 1928.
10. Deep borings in Ontario and maritime provinces: Canada, Geol. Survey, Summ. Rept., 1927, pt. C, pp. 112-115, 1928.

Ingalls, Albert G.

1. Out of doors with the earth: Sci. Am., vol. 132, pp. 365-367, 9 figs., June, 1925.
2. Are the continents drifting?: Sci. Am., vol. 134, pp. 8-9, 6 figs., January, 1926.
3. Little-known ice ages of great antiquity: Sci. Am., vol. 135, pp. 272-273, October, 1926.
4. Mastodon or mammoth?: Sci. Am., vol. 135, pp. 289-290, 292, 8 figs., October, 1926.

Ingalls, Walter Renton.

1. Rossiter W. Raymond: Eng. and Min. Jour., vol. 107, pp. 135-142, 4 figs. (incl. portr.), January 18, 1919.

Inman, O. L.

1. Iron-depositing bacteria: Science, new ser., vol. 57, p. 13, July 6, 1923.

Insley, Herbert.

1. The gabbros and associated intrusive rocks of Harford County, Maryland: Maryland Geol. Survey, vol. 12, pp. 289-322, 1928.

Institute for Government Research.

1. Service monographs of the United States Government, No. 1. The U. S. Geological Survey; its history, activities, and organization. 163 pp., 2 maps, New York, D. Appleton and Company, 1918.

Ireland, H. Andrew.

1. *Spirifer* horizons of the Ohio mid-Devonian: Oklahoma Acad. Sci., Proc., vol. 6, pt. 2, 1926 (Oklahoma, Univ., Bull., new ser. no. 348), pp. 246-250, January 1, 1927.

Irion, V. K.

1. A brief survey of the natural resources of Louisiana: Louisiana, Dept. Conservation, Bull. 13, 48 pp., illus., January, 1926.

Irving, John Duer. See Darton, 14; Emmons, S. F., 1.

Irwin, J. S.

1. Oil and gas possibilities of eastern Alberta: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 2, pp. 147-158, 1 fig., March-April, 1923.
2. Faulting in the Rocky Mountain region: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 2, pp. 105-129, 7 figs., February, 1926.

Israelsky, Merle Cathcart.

1. Some new forms of west coast fossil Echinoidea: California, Univ., Dept. Geol. Sci., Bull., vol. 14, no. 11, pp. 377-396, 6 pls., November 7, 1923.
2. Notes on some echinoids from the San Rafael and Tuxpam beds of the Tampico region, Mexico: California Acad. Sci., Proc., 4th ser., vol. 13, no. 8, pp. 137-145, 3 pls., March 18, 1924.

Jackson, Robert Tracy.

1. Value and use of stages in development in teaching paleontology: *Geol. Soc. America, Bull.*, vol. 31, no. 3, pp. 395-399, September 30, 1920.
2. Fossil Echini of the West Indies: *Carnegie Inst. Washington, Pub. no. 306*, pp. 1-103, 6 figs., 18 pls., 1922.

Jacobs, Elbridge Churchill.

1. The lime industry in Vermont: *Vermont, State Geologist, 11th Rept.*, pp. 158-164 [1919].
2. Progress in talc production: *Vermont, State Geologist, Twelfth Rept.*, 1919-20, pp. 101-113, 1921.
3. The geology of Lake Willoughby: *Vermont, State Geologist, Twelfth Rept.*, 1919-20, pp. 280-298, 3 figs., 6 pls., 1921.
4. The geology of Westmore, Brownington, and Charleston [Orleans County]: *Vermont, State Geologist, Thirteenth Rept.*, 1921-1922, pp. 93-108, 8 pls. (incl. maps), 1923.
5. The clay deposits and clay industries of Vermont: *Vermont, State Geologist, 15th Rept.*, 1925-26, pp. 191-221, 6 figs., 1927.
6. Flood erosion at Cavendish, Vermont: *Science, new ser.*, vol. 66, pp. 653-654, December 30, 1927.

Jaeger, Fritz.

1. Untersuchungen über das diluviale Klima in Mexiko: *Gesell. Erdkunde Berlin, Zeitschr.*, no. 9-10, pp. 366-373, 1925.
2. Forschungen über das diluviale Klima in Mexiko: *Petermanns Mitteilungen, Ergänzungsheft no. 190*, 64 pp., 13 pls. (incl. maps), Gotha, Justus Perthes, 1926.

Jaekel, Otto.

1. Phylogenie und System der Pelmatozoen: *Palaeontologische Zeitschr.*, Bd. 3, H. 1, pp. 1-128, 114 figs., October, 1918.

Jaggard, Thomas Augustus, jr. See also Science Service, 2.

1. [Observations on Hawaiian volcanoes, chiefly on Halemaumau]: *Hawaiian Volcano Observatory, Monthly Bull.*, vols. 7-16, 1919-1928.
2. Seismometric investigation of the Hawaiian lava column: *Seismol. Soc. America, Bull.*, vol. 10, no. 4, pp. 155-275, 11 pls., December, 1920.
3. The program of experimental volcanology: *Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2*, pp. 309-324, 1921.
4. Experiences in a volcano observatory [at Hawaii]: *Natural History, Jour. Am. Mus. Nat. Hist.*, vol. 21, no. 4, pp. 337-342, 2 figs., July-August, 1921.
5. A plea for geophysical and geochemical laboratories: *Washington Acad. Sci., Jour.*, vol. 12, no. 15, pp. 343-353, September 19, 1922.
6. (and Thurston, L. A.). The Hawaiian Volcano Research Association: *Pan-Pacific Sci. Cong., Australia, 1923, vol. 1*, pp. 847-850 [1924].
7. The lava tide, seasonal tilt, and the volcanic cycle: *Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2*, pp. 1369-1375, 4 figs. [1924].
8. Activity of Kilauea Volcano: *Science, new ser.*, vol. 60, supplement, pp. x, xii, September 5, 1924.
9. (and Finch, R. H.). The explosive eruption of Kilauea in Hawaii, 1924: *Am. Jour. Sci.*, 5th ser., vol. 8, pp. 353-374, 14 figs., November, 1924.

Jaggar, Thomas Augustus, jr.—Continued.

10. The Hawaiian volcanoes (abstract): Washington Acad. Sci., Jour., vol. 15, no. 13, p. 304, July 19, 1925.
11. Geological notes on Mauna Kea: Hawaiian Volcano Observatory, Monthly Bull., vol. 13, no. 10, pp. 75–77, 6 pls., October, 1925.
12. Earthquake insurance: Matériaux pour l'étude des calamités, ann. 2, no. 7, pp. 191–217, October–December, 1925.
13. Plus and minus volcanicity (abstract): Washington Acad. Sci., Jour., vol. 15, no. 18, pp. 416–417, November 4, 1925; Bull. volcanologique, 2° ann., nos. 5–6, pp. 327–328, 1925.
14. Progress of volcanology during 1924: Washington Acad. Sci., Jour., vol. 15, no. 18, pp. 424–425, November, 1925; Bull. volcanologique, 2° ann., nos. 5–6, pp. 336–337, 1925.
15. So-called volcanic earthquakes: Science, new ser., vol. 63, pp. 414–415, April 23, 1926.
16. The section of volcanology of the U. S. Geological Survey: Science, new ser., vol. 64, pp. 242–243, September 10, 1926.
17. Engulfment in volcanism (abstract): Washington Acad. Sci., Jour., vol. 17, no. 1, pp. 23–24, January 3, 1927.
18. Temperatures of volcano borings: Hawaiian Volcano Observatory, Monthly Bull., vol. 15, no. 3, pp. 15–17, March, 1927.
19. The opportunity for scientific research in the national parks of America: Hawaiian Volcano Observatory, Monthly Bull., vol. 15, no. 4, pp. 23–28, April, 1927.
20. Volcano research of the United States Geological Survey: Washington Acad. Sci. Jour., vol. 18, no. 19, pp. 512–515, November, 1928.
21. Volcanic relations of great Pacific earthquakes (abstract): Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., p. 370, 1928.
22. (and Finch, R. H.). Tilting and level changes at Pacific volcanoes: Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., pp. 672–686, 3 figs., 1928.
23. (and Finch, R. H.). Temperatures of volcano borings (abstract): Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., p. 687, 1928.
24. Engulfment during Pacific explosive eruptions (abstract): Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., pp. 687–688, 1928.

Jakosky, J. J.

1. The inductive method of geophysical prospecting: Canadian Min. Jour., vol. 49, nos. 14, 15, and 16, pp. 286–289, 311–313, 327–329, 16 figs., April 6, 13, and 21, 1928.
2. Operating principles of inductive geophysical processes: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 134, 39 pp., 27 figs., October, 1928.

James, Albert V. G.

1. Factors producing columnar structure in lavas and its occurrence near Melbourne, Australia: Jour. Geology, vol. 28, no. 5, pp. 458–469, 16 figs. July–August, 1920.

James, W. F. See also Collins, W. H., 21, 22; Cooke, H. C., 31.

1. Duparquet map area, Quebec: Canada, Geol. Survey, Summ. Rept., 1922, pt. D, pp. 75–96, map, 1923.
2. Rouyn map area, Timiskaming County, Quebec: Canada, Geol. Survey, Summ. Rept., 1923, pt. C 1, pp. 126–144, 1 fig., 1 map, 1924.
3. The Rouyn map area; report on part of the Quebec gold belt: Canadian Min. Jour., vol. 45, no. 18, pp. 421–425, 4 figs., May 2, 1924.

James, W. F.—Continued.

4. (and Mawdsley, J. B.). Cléricky and Kinojevis map areas, Témiscamingue and Abitibi counties, Quebec: Canada, Geol. Survey, Summ. Rept., 1924, pt. C, pp. 99-125, 2 maps, 1926; in part, Canadian Min. Jour., vol. 46, no. 10, pp. 243-246, 3 figs., March 6, 1925.
5. (and Mawdsley, J. B.). La Motte and Fournière map area, Abitibi County, Quebec: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 52-77, 2 maps, 1927.
6. (and Mawdsley, J. B.). Certain mineral deposits in Desmeloizes and Trécesson townships, Quebec: Canada, Geol. Survey, 1925, pt. C, pp. 78-81, 1927.
7. (and Mawdsley, J. B.). Fiedmont and Dubuisson map areas. Abitibi County, Quebec: Canada, Geol. Survey, Summ. Rept., 1926, pt. C, pp. 56-72, 2 figs. (maps), 1927.
8. Developments in the western part of Rouyn district [Quebec]: Canadian Min. and Met. Bull., no. 198, pp. 1195-1212, 3 figs., October, 1928.

Jandorf, Morton Lehmayr.

1. Unusual minerals in limestone near York, Pennsylvania: Am. Mineralogist, vol. 5, no. 11, p. 196, November, 1920.

Janensch, W.

1. Dinosaurier-Reste aus Mexiko: Centralbl. Mineralogie, Abt. B, 1926, no. 6 pp. 192-197, 2 figs., 1926.

Jaques, H. E.

1. Some proboscidean remains found in Henry County: Iowa Acad. Sci., Proc. 1921, vol. 28, pp. 65-68, 4 figs. [1923].

Jarvis, Gerald.

1. Lacustrine littoral forms referable to ice pressure: Canadian Field-Nat., vol. 42, no. 2, pp. 29-32, February, 1928.

Jarvis, Royal P.

1. Magmas, dikes, and veins: Mining and Metallurgy, vol. 8, no. 241, pp. 28-31, January, 1927; no. 247, pp. 321-322, July, 1927.

Jeannet, Alph.

1. Contribution à l'étude des échinides tertiaires de la Trinité et du Vénézuéla: Soc. paléont. suisse, Mém., vol. 48, 49 pp., 12 figs., 6 pls. 1928.

Jeffrey, Edward Charles.

1. Genus *Sequoia* in the Mesozoic (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 134, March 31, 1921.
2. Genus *Araucarioxylon* in the American Cretaceous (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 135, March 31, 1921.
3. Cupressinoxyla of the Mesozoic (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 135, March 31, 1921.
4. Transitional coals and their bearing on hypotheses of the origin of coals: (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 148-149, March 31, 1922.
5. Organization of Pennsylvania anthracite and the peat hypotheses of the origin of coal (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 149, March 31, 1922.
6. Pines of the Mesozoic and their relationship to older and more modern types (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 204-205, March 31, 1922.

Jeffrey, Edward Charles—Continued.

7. Occurrence of the parichnos of Bertrand in certain gymnosperms (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 208, March 31, 1922.
8. The structure and origin of coking coals: *Science, new ser.*, vol. 58, pp. 285-286, October 12, 1923.
9. The origin and organization of coal: *Am. Acad. Arts and Sci., Mem.*, vol. 15, no. 1, 52 pp., 13 pls., November 10, 1924.
10. Coal and civilization. 178 pp., 44 figs., 1 pl., New York, The Macmillan Company, 1925.
11. Coal in relation to coke: *Am. Inst. Min. and Met. Eng., Trans.* [pre-print], no. 1399, 10 pp., 12 figs., January, 1925; with discussion, *Trans.*, vol. 71, pp. 149-164, 13 figs., 1925; abstract, *Mining and Metallurgy*, vol. 64, no. 228, p. 614, December, 1925.
12. Conifers and the coal question: *Science, new ser.*, vol. 65, pp. 356-357, April 8, 1927.

Jeffreys, Harold.

1. Origin of the solar system; a reply to "T. C. C.": *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 395-405, May, 1925.

Jelliff, Fred R.

1. Fishing with a hammer [occurrence of fossils in coal-measure shales near Galesburg, Illinois]: *Illinois State Acad. Sci., Trans.*, vol. 16, pp. 335-341, 1 fig., 6 pls., 1923.
2. A prolific coal field [Knox County]: *Illinois State Acad. Sci., Trans.*, vol. 18, pp. 383-393, 4 figs., 1925.
3. Life in a coal-measure mud rock: *Illinois State Acad. Sci., Trans.*, vol. 19, pp. 306-307, 1 pl., 1926.

Jenkins, Olaf Pitt.

1. Geologic map of Tennessee. Second edition. Tennessee State Geol. Survey, 1919. Scale, 1:500,000.
2. (and Wilson, Eldred D.). List of United States Geological Survey publications relating to Arizona: *Arizona, Univ., Bull.* no. 104 (geol. ser. no. 1), 40 pp., 1920.
3. (and Wilson, Eldred D.). A geological reconnaissance of the Tucson and Amole Mountains: *Arizona, Univ., Bull.* no. 106 (geol. ser., no. 2), pp. 5-18, 7 figs., 3 pls., May, 1920.
4. Underground water supply of the region about White Bluffs and Hanford: Washington, Dept. Conservation and Development, Division of Geology, *Bull.* no. 26, (geol. ser.), 41 pp., 4 pls. (incl. map), 1922.
5. (and Cooper, H. H.). A study of the iron ores of Washington: Washington, Dept. Conservation, Division of Geology, *Bull.* no. 27 (geol. ser.), pp. 11-115, 11 figs., 1 pl. (map), 1922.
6. Verde River lake beds near Clarkdale, Arizona: *Am. Jour. Sci.*, 5th ser., vol. 5, pp. 65-81, 7 figs. (incl. map), January, 1923.
7. Geological investigation of the coal fields of western Whatcom County, Washington: Washington, Dept. Conservation, Div. Geology, *Bull.* no. 28, 135 pp., 2 figs., 4 pls. (incl. map), 1923.
8. Geological investigation of the coal fields of Skagit County, Washington: Washington, Dept. Conservation, Division of Geology, *Bull.* no. 29, 63 pp., 5 figs., 7 pls. (incl. map), 1924.

Jenkins, Olaf Pitt—Continued.

9. Lead deposits of Pend Oreille and Stevens counties, Washington: Washington, Dept. Conservation, Div. Geology, Bull. no. 31, 153 pp., 15 figs., 3 pls., 1924.
10. Unconformity between the Ringold and Ellensburg formations, Washington: California, Univ., Dept. Geol. Sci., Bull., vol. 15, no. 2, pp. 45-47, 1 fig., 1 pl., September 17, 1924.
11. Clastic dikes of southeastern Washington (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 202, March 30, 1925.
12. Genetic types of Washington lead ores: Pan-Am. Geologist, vol. 43, no. 5, pp. 349-356, 1 pl. (map), June, 1925.
13. Mechanics of clastic dike intrusion: Eng. and Min. Jour.-Press, vol. 120, no. 1, p. 12, 2 figs., July 4, 1925.
14. Clastic dikes of eastern Washington and their geologic significance: Am. Jour. Sci., 5th ser., vol. 10, pp. 234-246, 2 figs., September, 1925.
15. The Spokane flood; a discussion: Jour. Geology, vol. 33, no. 7, pp. 747-748, October-November, 1925.
16. Extensive preglacial oxidation of lead deposits in northeastern Washington (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 209, March 30, 1926.

Jennings, Otto Emery.

1. Fossil plants from the beds of volcanic ash near Missoula, western Montana: Carnegie Mus., Mem., vol. 8, no. 2, pp. 385-450, 1 fig., 12 pls., September, 1920.
2. Have the streams of Long Island been deflected by the earth's rotation?: Science, new ser., vol. 55, p. 291, March 17, 1922.

Jennison, William Franklyn.

1. Manganese deposits in Nova Scotia: Eng. and Min. Jour.-Press, vol. 115, no. 17, p. 746, April 28, 1923.

Jensen, Joseph.

1. (and Robertson, Glenn D.). Development in southern California since 1923: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 6, pp. 625-650, 13 figs. (incl. maps), June, 1928.

Jensen, J. B.

1. The aspect of the petro-shales of the western slope [Colorado, Utah, and Wyoming]: Am. Mining Cong., 23d Ann. Convention, Rept. of Proc., pp. 532-550, 1921.

Jepsen, Glenn L. See also Sinclair, 10.

1. Fossil collecting in the badlands [South Dakota]: Black Hills Engineer, vol. 14, no. 2, pp. 77-86, 12 figs., March, 1926.
2. The oldest known cat, *Hoplophoneus oharrai* [from badlands, South Dakota]: Black Hills Engineer, vol. 14, no. 2, pp. 87-92, 2 figs., March, 1926.

Jewell, W. B.

1. Mineral deposits of the Hyder district, southeastern Alaska: Econ. Geology, vol. 22, no. 5, pp. 494-517, 6 figs., August, 1927.

Jillson, Willard Rouse. See also Kentucky Geol. Survey; Randolph, 1.

1. Geologic map of Kentucky and the adjoining States showing the surficial distribution of oil and gas producing formations in the Appalachian and adjacent fields. Lexington, Ky., 1918. Scale 1:5,000,000.

Jillson, Willard Rouse—Continued.

2. The oil and gas resources of Kentucky: Kentucky, Dept. Geology and Forestry, Series 5, Bull. 1, 630 pp., illus. (incl. maps), 1919. 2d. ed., 1920.
3. The geology and coals of Stinking Creek, Knox County, Kentucky: Kentucky, Dept. Geology and Forestry, Series 5, Bull. 3, 89 pp., map, illus., 1919.
4. Sketch of the development of the oil and gas industry in Kentucky during the past century (1819–1919): Kentucky, Dept. Geology and Forestry, Mineral and Forest Resources of Kentucky, vol. 1, no. 1, pp. 3–28, 12 figs., April, 1919.
5. The used and unused natural gas fields of eastern Kentucky and their relation to present and future public service demands: Kentucky, Dept. Geology and Forestry, Mineral and Forest Resources of Kentucky, vol. 1, no. 1, pp. 29–36, 2 figs., April, 1919.
6. A bibliography of Kentucky petroleum, natural gas, asphalt, and oil shale: Kentucky, Dept. Geology and Forestry, Mineral and Forest Resources of Kentucky, vol. 1, no. 1, pp. 37–43, April, 1919.
7. Structural deformation and its relation to proven oil and gas accumulation in eastern Kentucky: Kentucky, Dept. Geology and Forestry, Ser. V. [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 2, pp. 47–57, 7 figs., July 1, 1919.
8. The status of the Mauch Chunk in southeastern Kentucky as a producer of petroleum and natural gas: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 2, pp. 85–93, July 1, 1919.
9. The Kendrick shale; a new calcareous fossil horizon in the coal measures of eastern Kentucky: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 2, pp. 96–104, 2 figs., July 1, 1919.
10. The migration of the headwaters divide of Right Middle Creek, Floyd County, Kentucky: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 2, pp. 105–109, 1 fig., July 1, 1919. *Am. Jour. Sci.*, 4th ser., vol. 47, pp. 60–64, 1 fig., January, 1919.
11. The low-sulphur coals of Kentucky: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 2, pp. 115–119, 1 fig., July 1, 1919. *Am. Inst. Min. and Met. Eng.*, Bull. no. 153, pp. 1675–1679, 1 fig., September, 1919; *Trans.*, vol. 63, pp. 723–726, 1920.
12. The new oil and gas pools of Allen County: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 2, pp. 120–143, 3 figs., July 1, 1919.
13. The oil and gas geology of Breathitt and Knott counties: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 3, pp. 178–219, 6 figs., 2 maps, October 1, 1919; also in Ser. V, Bull. 4, pp. 98–139, 1920.
14. A bibliography of the coals of Kentucky: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 3, pp. 285–301, October 1, 1919.

Jillson, Willard Rouse—Continued.

15. The production of coal in Kentucky: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 3, pp. 302-320, 10 figs., October 1, 1919.
16. The Wier sand—a newly recognized oil horizon in eastern Kentucky: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 3, pp. 321-333, 2 figs., October 1, 1919.
17. The pay oil sands of eastern Kentucky: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 3, pp. 334-366, 10 figs., October 1, 1919.
18. The new oil and gas pools of Warren County, Kentucky: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 3, pp. 368-396, 7 figs., map, October 1, 1919; also in Ser. V, Bull. 4, pp. 223-251, 1920.
19. New fossil invertebrates from a new fossil horizon in the coal measures of eastern Kentucky (abstract): Science, new ser., vol. 50, p. 95, July 25, 1919.
20. Geologic map of Kentucky showing oil and gas pools and pipe lines and the eastern and western coal fields: Kentucky Geol. Survey, Series 6, 1920. Scale, 1 inch=10 miles. Another edition, 1923.
21. Contributions to Kentucky geology; an indexed collection of all the shorter papers and reports of the State geologist written during the year 1919 on the mineral resources of the commonwealth [chiefly petroleum, natural gas, and coal]; Kentucky, Dept. Geology and Forestry, Ser. 5, Bull. 4, 266 pp., 65 figs., 1920.
22. A bibliography of the several books, reports, papers, and maps relating to geology written and prepared by Willard Rouse Jillson: Kentucky Geol. Survey, Ser. no. VI (Pamphlet no. 1), 7 pp., Frankfort, Ky., 1920.
23. Geological problems in the recovery of oil and gas in Kentucky: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 3, pp. 303-312, 1 fig., 1920; Kentucky Geol. Survey, Ser. 6, vol. 2, pp. 59-70, 1921.
24. A Mauch Chunk island in the Mississippian seas of eastern Kentucky (abstract): Science, new ser., vol. 51, p. 492, May 14, 1920.
25. Economic papers on Kentucky geology; an indexed collection of thirteen short papers and reports on the geology and special occurrence of oil and gas, oil shale, asphalt, rock, and fluorspar within the commonwealth: Kentucky Geol. Survey, ser. 6, vol. 2, 304 pp., illus., 1921.
26. An administrative report (years of 1920 and 1921): Kentucky Geol. Survey, ser. 6, vol. 6, pp. 1-34, 2 pls., 1921.
27. Geology and coals of the Middle Fork of the Kentucky River near Buckhorn in Perry and Breathitt counties: Kentucky Geol. Survey, ser. 6, vol. 6, pp. 53-101, 28 figs., 1921.
28. Oil and gas possibilities of the "Jackson Purchase" region: Kentucky Geol. Survey, ser. 6, vol. 6, pp. 191-220, 11 figs., 1921.
29. Recent mineral production in Kentucky: Kentucky Geol. Survey, ser. 6, vol. 6, pp. 261-267, 1921.
30. The region about Frankfort: Kentucky Geol. Survey, ser. 6, vol. 6, pp. 269-282, 8 figs., 1 pl. (map), 1921.

Jillson, Willard Rouse—Continued.

31. A bibliography of the several books, reports, papers, and maps principally relating to geology written and prepared by Willard Rouse Jillson: Kentucky Geol. Survey, ser. 6, Pamphlet no. 2, 11 pp., 1921.
32. The production of eastern Kentucky crude oils. . . . 99 pp., 1 fig., prepared for and published by the Cumberland Pipe Line Co., Winchester, Ky., 1921.
33. Physiographic effects of the volcanism of Mt. St. Helens [Washington]: Geog. Rev., vol. 11, no. 3, pp. 398–405, 6 figs., July, 1921.
34. A history of the Kentucky Geological Survey (1838–1921): Kentucky State Historical Soc., Register, vol. 19, no. 57, pp. 90–112, 2 pls. (portraits), September, 1921.
35. Oil-field stratigraphy of Kentucky: Kentucky Geol. Survey, ser. 6, vol. 3, 738 pp., 35 figs., 1922.
36. A bibliography of the several books, reports, papers, and maps, principally relating to geology, written and prepared by Willard Rouse Jillson: Kentucky Geol. Survey, ser. 6, Pamphlet no. 3, 14 pp., Frankfort, Ky., 1922.
37. The coal industry in Kentucky; an historical sketch. 87 pp., Frankfort, The State Journal Company, 1922.
38. The conservation of natural gas in Kentucky. 152 pp., 43 figs., Louisville, Kentucky, John P. Morton & Company, 1922.
39. A bibliography of the geology and paleontology of the John Day region, Oregon. 7 pp., Frankfort, Kentucky, 1923 [private publication].
40. Administrative report for the (Sixth) Kentucky Geological Survey (years 1922 and 1923), 30 pp., 2 pls., (incl. map), 1923.
41. A bibliography of the Mammoth Cave of Kentucky: Kentucky Geol. Survey, ser. 6, vol. 10, pp. 149–156, 1923.
42. Geological research in Kentucky; a summary account of the several geological surveys of Kentucky, including a complete list of their publications and a general bibliography of 806 titles pertaining to Kentucky geology: Kentucky Geol. Survey, ser. 6, vol. 15, 228 pp., 10 pls. (maps and portraits), 1923.
43. Emory River overthrust of east Tennessee: Pan-Am. Geologist, vol. 39, no. 5, pp. 373–378, 2 pls. (incl. map), June, 1923.
44. The Haddix-Coalburg geosyncline (abstract): Science, new ser., vol. 58, p. 184, September 7, 1923; Kentucky Acad. Sci., Trans., vol. 1, pp. 144–145, 1924.
45. Land of ten thousand sinks (abstract): Science, new ser., vol. 58, pp. 184–185, September 7, 1923; Kentucky Acad. Sci., Trans., vol. 1, pp. 143–144, 1924.
46. A gigantic slate slide [Burdine, Letcher County, Kentucky] (abstract): Science, new ser., vol. 58, p. 185, September 7, 1923; Kentucky Acad. Sci., Trans., vol. 1, p. 146, 1924.
47. New Tennessee oil pool: Pan-Am. Geologist, vol. 40, no. 3, pp. 197–202, 2 pls., October, 1923.
48. An isothrustic hypothesis: Pan-Am. Geologist, vol. 40, no. 4, pp. 251–258, 1 pl., November, 1923.
49. Unique Devonian sandbar [Cheatham County, Tennessee]: Pan-Am. Geologist, vol. 40, no. 5, pp. 333–337, 1 pl., December, 1923.
50. Kentucky State parks; a brief presentation of the geology and topography of some proposed State park areas based upon original field investigation. 92 pp., 32 pls. and figs., Kentucky Geol. Survey, Frankfort, Ky., 1924.

Jillson, Willard Rouse—Continued.

51. A bibliography of the several books, reports, papers, and maps principally relating to geology written and prepared by Willard Rouse Jillson: Kentucky Geol. Survey, ser. 6, Pamphlet no. 4, 17 pp., 1924.
52. The coal industry in Kentucky: Kentucky Geol. Survey, ser. 6, vol. 20, 164 pp., 42 figs. and pls., map, 1924.
53. New fossil invertebrates from a new fossil horizon in the coal measures of eastern Kentucky (abstract): Kentucky Acad. Sci., Trans., vol. 1, p. 68, 1924.
54. A mica deposit in eastern Kentucky (abstract): Kentucky Acad. Sci., Trans., vol. 1, p. 71, 1924.
55. Asphalt coal: Kentucky Acad. Sci., Trans., vol. 1, pp. 78-81, 1924.
56. The occurrence of Cretaceous sediments between the Cumberland and Tennessee rivers in western Kentucky: Kentucky Acad. Sci., Trans., vol. 1, pp. 81-83, 1924.
57. Depletion of Kentucky crude oils: Kentucky Acad. Sci., Trans., vol. 1, pp. 122-127, 1924.
58. Early mineral explorations in the Mississippi Valley (1540-1840): Illinois State Hist. Library, Pub. no. 31 (Illinois State Hist. Soc., Trans. 1924), pp. 41-57, 1924.
59. Geology of Harpeth River, Tennessee, area: Oil and Gas Jour., vol. 28, no. 6, pp. 58, 70, 1 fig. (map), January 10, 1924.
60. Fault pattern of Kentucky: Pan-Am. Geologist, vol. 41, no. 1, pp. 31-32, February, 1924.
61. New relief map of Kentucky: Pan-Am. Geologist, vol. 41, no. 1, pp. 75-76, February, 1924.
62. Kentucky cannel coals: Pan-Am. Geologist, vol. 41, no. 2, pp. 97-98, March, 1924.
63. Primeval tracts in Kentucky: Pan-Am. Geologist, vol. 41, no. 3, pp. 169-175, 1 pl., April, 1924.
64. Kentucky rock asphalt: Pan-Am. Geologist, vol. 41, no. 4, pp. 251-258, 3 pls., May, 1924; Kentucky Geol. Survey, ser. 6, vol. 30, pp. 95-103, 7 figs., 1927 [c. 1928]; Eng. and Min. Jour., vol. 125, no. 2, pp. 1011-1012, 2 figs., June 23, 1928.
65. Glacial pebbles in eastern Kentucky: Science, new ser., vol. 60, pp. 101-102, August 1, 1924; Kentucky Acad. Sci., Trans., vol. 2, pp. 75-76, 1927.
66. American karst country: Pan-Am. Geologist, vol. 42, no. 1, pp. 37-41, 4 pls., August, 1924.
67. Glaciation in eastern Kentucky: Pan-Am. Geologist, vol. 42, no. 2, pp. 125-132, 3 pls., September, 1924.
68. Outlook for mineral development in Kentucky: The South's Development Manufacturers Record, vol. 86, no. 24, pt. 2, pp. 374-375, December 11, 1924.
69. Administrative report for the (Sixth) Kentucky Geological Survey, years 1924 and 1925: Kentucky Geol. Survey, ser. 6, Pam. 5, 54 pp., 7 pls., 1925.
70. Geologic map of Kentucky showing oil, gas, coal, asphalt, and fluorspar fields: Kentucky Geol. Survey, ser. 6, 1925. Scale: 1 inch = 10 miles.
71. Early glaciation in Kentucky: Pan-Am. Geologist, vol. 44, no. 1, pp. 11-20, 1 pl., August, 1925; abstract, Kentucky Acad. Sci., Trans., vol. 2, p. 137, 1927.

Jillson, Willard Rouse—Continued.

72. Agricultural perspective of Kentucky geology: *Pan-Am. Geologist*, vol. 44, no. 4, pp. 295–308, 387–396, 5 pls., map, November and December, 1925.
73. New oil pools of Kentucky: *Kentucky Geol. Survey*, ser. 6, vol. 12, 394 pp., 103 illus. (incl. maps), 1926.
74. Résumé of Kentucky's mineral resources: *Kentucky Geol. Survey*, ser. 6, Pam. 7, 11 pp., illus., 1926.
75. Fire clays of northeastern Kentucky: *Kentucky Geol. Survey*, ser. 6, Pam. 8, 9 pp., 3 figs., 1926.
76. The clays of Kentucky: *The Ceramist*, vol. 7, no. 5, pp. 281–285, 3 figs., February, 1926; *Kentucky Geol. Survey*, ser. 6, Pam. 9, 15 pp., 6 figs., 1926.
77. A bibliography of the several books, reports, papers, and maps principally relating to geology written and prepared by Willard Rouse Jillson: *Kentucky Geol. Survey*, ser. 6, Pam. no. 11, 22 pp., 1926.
78. Recent geological investigations in Kentucky: *The Kentucky Outlook*, vol. 2, no. 2, p. 6, January 9, 1926.
79. Natural resources of Kentucky: *The Kentucky Outlook*, vol. 2, no. 7, pp. 4–5, February 13, 1926.
80. Major drainage modifications of Big Sandy River: *Pan-Am. Geologist*, vol. 46, no. 1, pp. 49–51, 1 fig., 1 pl., August, 1926.
81. Oil domes of Ashland [Boyd County, Kentucky]: *Pan-Am. Geologist*, vol. 46, no. 2, pp. 121–122, 1 pl., September, 1926.
82. Kentucky State parks; a brief presentation of geology and topography of some proposed State park areas based upon original field investigations. vii, 92 pp., 35 illus., *Kentucky Geological Survey*, Frankfort, Ky., 1927.
83. Geology of the oil shales of the eastern United States: *Kentucky Geol. Survey*, ser. 6, pam. 10, 18 pp., 10 figs., 1927.
84. Geology of the Island Creek oil pool: *Kentucky Geol. Survey*, ser. 6, pam. 12, 55, 20 figs. and pls., 1927.
85. Kentucky's mineral resources: *Kentucky Geol. Survey*, ser. 6, pam. 13, 45 pp., 37 figs. (incl. mineral index maps), 1927.
86. Geologic map of Kentucky showing oil and gas pools and pipelines, fluorspar and rock asphalt deposits, and the eastern and western coal fields . . . by Willard Rouse Jillson. Scale 1 inch=10 miles, *Kentucky Geol. Survey*, ser. 6, 1927.
87. Geologic map of Kentucky showing oil, gas, coal, asphalt, and fluor-spar fields, by Willard Rouse Jillson, 2d ed., revised. Scale 1 inch=30 miles. *Kentucky Geol. Survey*, ser. 6, 1927.
88. Geological map of Ohio County, Kentucky: *Kentucky Geol. Survey*, ser. 6, 1927. Scale 1 inch=1 mile.
89. Shading of contoured topographic maps: *Pan-Am. Geologist*, vol. 47, no. 1, pp. 11–14, 3 pls., February, 1927.
90. Valley-filled areas of western Kentucky coal field (abstract): *Pan-Am. Geologist*, vol. 47, no. 4, pp. 315–316, May, 1927.
91. Recent activities of Kentucky Geological Survey: *Pan-Am. Geologist*, vol. 48, no. 3, pp. 235–240, October, 1927.
92. Geology of the Carter caves (abstract): *Kentucky Acad. Sci., Trans.*, vol. 2, p. 77, 1927.

Jillson, Willard Rouse—Continued.

93. Major drainage modifications of the Big Sandy River (abstract): Kentucky Acad. Sci., Trans., vol. 2, pp. 137-139, 1927.
94. Exploration for oil and gas in Boyd County, Kentucky (abstract): Kentucky Acad. Sci., Trans., vol. 2, pp. 139-141, 1927.
95. Geology of the oil shales of the eastern United States (abstract): Kentucky Acad. Sci., Trans., vol. 2, pp. 226-227, 1927.
96. Geology of oil shales of eastern United States: Pan-Am. Geologist, vol. 48, no. 4, pp. 262-272, 4 pls., November, 1927.
97. Administrative report for the (sixth) Kentucky Geological Survey, years 1926 and 1927: Kentucky Geol. Survey, ser. 6, Pam. 20, 96 pp., 30 illus., index map, 1927.
98. The topography of Kentucky; a systematic study and classification of the prominent physical features of Kentucky coupled with an indexed collection of twenty-four separate papers on the geology and mineral resources of the Commonwealth: Kentucky Geol. Survey, Ser. 6, vol. 30, 291 pp., 131 illus., 1927 [c. 1928].
99. Geology of Amory, Mississippi, gas field: Oil and Gas Jour., vol. 26, no. 36, pp. 58, 126, 128, 4 figs., January 26, 1928.
100. Recently abandoned entrenched meander [western Kentucky]: Pan-Am. Geologist, vol. 50, no. 1, pp. 5-6, August, 1928; abstract, Ohio Acad. Sci., Proc., vol. 8, pt. 4, pp. 177-178, 1928; Ohio Jour. Sci., vol. 28, no. 3, pp. 155-156, May, 1928.
101. Pre-Pennsylvanian deformation in western Kentucky (abstract): Ohio Acad. Sci., Proc., vol. 8, pt. 4, pp. 174-175, 1928; Ohio Jour. Sci., vol. 28, no. 3, pp. 152-153, May, 1928.
102. Early Carbonic deformation in western Kentucky: Pan-Am. Geologist, vol. 49, no. 5, pp. 357-358, 1 pl., June, 1928.
103. Oil and gas map of Butler County, Kentucky. Scale 1:62,500. Kentucky Geol. Survey, ser. 6, 1928.
104. Reconnaissance geological map of Ohio County, Kentucky Geol. Survey, ser. 6, 1928. Scale 1 inch=1 mile.
105. Sketches in geology; a group of twenty-two separate papers on American geology [reprinted from earlier publications]. 150 pp., 43 illus., Louisville, Kentucky, C. T. Dearing Printing Co., 1928.
106. Geology in the service of a new National Park: Pan-Am. Geologist, vol. 50, no. 4, pp. 268-270, 1 pl., November, 1928.
107. Peneplanes in Kentucky: Pan-Am. Geologist, vol. 50, no. 5, pp. 333-338, 2 pls., December, 1928.
108. A correlation of the coals of western Kentucky, southeastern Illinois and southwestern Indiana: Min. Cong. Jour., vol. 14, no. 12, pp. 914-916, December, 1928.

Johannsen, Albert.

1. (and Stephenson, E. A.). On the accuracy of the Rosiwal method for the determination of the minerals in a rock: Jour. Geology, vol. 27, no. 3, pp. 212-220, April-May, 1919.
2. A planimeter method for the determination of the percentage compositions of rocks: Jour. Geology, vol. 27, no. 4, pp. 276-285, 6 figs., May-June, 1919.
3. A quantitative mineralogical classification of igneous rocks—revised: Jour. Geology, vol. 28, nos. 1-3, pp. 38-60, 158-177, 210-232, 7 figs., 1920.

Johannsen, Albert—Continued.

4. Petrological abstracts and reviews: *Jour. Geology*, vol. 30, no. 2, pp. 170-174, February-March; no. 3, pp. 252-256, April-May; no. 4, pp. 319-324, May-June; no. 6, pp. 482-500, September-October; no. 7, pp. 632-645, October-November; no. 8, pp. 703-716, November-December, 1922; vol. 31, no. 1, pp. 80-85, January-February, 1923; vol. 32, no. 4, pp. 337-343, May-June, no. 5, pp. 443-446, July-August, 1924; vol. 34, no. 5, pp. 475-478, July-August; no. 6, pp. 559-571, August-September; no. 8, pp. 840-842, November-December, 1926; vol. 35, no. 4, pp. 378-384, May-June, 1927.
5. On the representation of igneous rocks in triangular diagrams: *Jour. Geology*, vol. 30, no. 2, pp. 167-169, 1 fig., February-March, 1922.
6. Essentials for the microscopical determination of rock-forming minerals and rocks in thin sections. 53 pp., 24 figs., University of Chicago Press, 1922.
7. (and Phemister, T. C.). A new method for measuring the optic angle of minerals: *Jour. Geology*, vol. 24, no. 1, pp. 81-84, 1 fig., January-February, 1924.
8. (and Phemister, T. C.). A note on the elasticity of some minerals and its measurement: *Jour. Geology*, vol. 33, no. 3, pp. 268-271, 1 fig., April-May, 1925.
9. A revised field classification of igneous rocks: *Jour. Geology*, vol. 34, no. 2, pp. 181-182, February-March, 1926.
10. (and Merritt, C. A.). Comparative losses in crushing and sifting rock minerals: *Jour. Geology*, vol. 34, no. 3, pp. 275-280, April-May, 1926.
11. The recognition of minerals and the determination of their properties in crushed rocks: *Jour. Geology*, vol. 34, no. 5, pp. 462-465, July-August, 1926.
12. On the use of the terms "diabase" and "dolerite": *Jour. Geology*, vol. 35, no. 3, pp. 270-275, April-May, 1927.
13. Comparative color ratios of American and European rocks: *Jour. Geology*, vol. 36, no. 3, pp. 283-286, April-May, 1928.
14. The serpentines of Harford County, Maryland: *Maryland Geol. Survey*, vol. 12, pp. 195-287, 2 figs., 2 pls., 1928.

Johnson, Bertrand Leroy. See also Knopf, A., 6.

1. Mining on Prince William Sound: *U. S. Geol. Survey, Bull.* 692, pp. 143-151, 1919.
2. Mineral resources of Jack Bay district and vicinity, Prince William Sound: *U. S. Geol. Survey, Bull.* 692, pp. 153-173, 1 pl., 1 fig. (maps), 1919.
3. Mining in central and northern Kenai Peninsula [Alaska]: *U. S. Geol. Survey, Bull.* 692, pp. 175-176, 1919.
4. Tin in 1920: *U. S. Geol. Survey, Mineral Resources*, 1920, pt. 1, pp. 505-509, April 27, 1922.
5. Tin in 1921: *U. S. Geol. Survey, Mineral Resources*, 1921, pt. 1, pp. 71-73, August 1, 1922.
6. Coal resources of the Pan-Pacific region: *Mid-Pacific Mag.*, vol. 25, no. 6, pp. 519-536, illus., June, 1923.
7. Tin in 1922: *U. S. Geol. Survey, Mineral Resources*, 1922, pt. 1, pp. 169-172, October 11, 1923.
8. Tin in 1923: *U. S. Geol. Survey, Mineral Resources*, 1923, pt. 1, pp. 101-103, September 26, 1924.

Johnson, Bertrand Leroy—Continued.

9. Tin in 1924: U. S. Geol. Survey, Mineral Resources, 1924, pt. 1, pp. 31-33, August 7, 1925.

Johnson, Charles Willison.

1. Fossil shells from the St. Lucie Canal, Florida: *Nautilus*, vol. 36, no. 1, pp. 10-11, July, 1922.

Johnson, Columban A.

1. Coal, oil, gas, and electricity; our natural resources. 107 pp., illus., Pittsburgh, Charles W. Swope, 1921.

Johnson, Douglas Wilson. See also Gardescu, 1; Johnson, R. H., 6; Pratt, 10, 13; White, D., 1.

1. Shore processes and shore line development. 584 pp., 73 pls., 148 figs., New York, John Wiley & Sons, 1919.
2. Retrograding of offshore bars (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 121-122, March 31, 1922.
3. The scenery of American rivers: *Geog. Soc. Philadelphia, Bull.*, vol. 20, nos. 3-4, pp. 22-27, April-July, 1922.
4. Rectilinear shore lines of the New England-Acadian region (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 57, March 30, 1923.
5. Some analogous shore lines of partially submerged Triassic lowlands (abstract): *Assoc. Am. Geographers, Annals*, vol. 13, no. 4, p. 211, December, 1923.
6. (and Stolfus, M. A.). The submerged coastal plain and oldland of New England: *Science, new ser.*, vol. 59, pp. 291-293, March 28, 1924.
7. La morphologie sous-marine du golfe du Maine: *Annales de Géographie*, ann. 33, no. 184, pp. 313-328, 4 figs., July 15, 1924.
8. The New England-Acadian shore line. xx, 608 pp., 273 figs., New York, John Wiley & Sons, 1925.
9. Blue book of the geological field excursion from New York to Gettysburg. 29 pp., 8 figs., New York, Columbia University Press, 1926.
10. Subaqueous terraces of the Great Lakes and the Saint Lawrence embayment (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 136, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 1, p. 77, February, 1925.
11. Submarine physiography of the Gulf of Maine (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 148-149, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 148, March, 1925.
12. William Otis Crosby: *Science, new ser.*, vol. 63, pp. 609-610, June 18, 1926.
13. Field trips in geology: *Science, new series*, vol. 64, pp. 396-397, October 22, 1926.
14. (and Winter, Elizabeth). Sea-level surfaces and the problem of coastal subsidence: *Am. Philos. Soc., Proc.*, vol. 66, pp. 465-496, 12 figs., 1927; abstract, *Science, new ser.*, vol. 65, p. 480, May 13, 1927.
15. Shore-line investigations on the Atlantic coast: *Science, new ser.*, vol. 65, pp. 4-7, January 7, 1927; *Recherches sur les lignes de rivage de l'océan Atlantique: Annales Géog.*, ann. 36, pp. 176-180, March 15, 1927.

Johnson, Douglas Wilson—Continued.

16. (and Pratt, Wallace E.). A local subsidence of the Gulf coast of Texas [Goose Creek oil field]: *Geog. Jour.*, vol. 69, no. 1, pp. 61–65, January, 1927; *Un affaissement local de la côte du golfe du Mexique au Texas: Annales Géog.*, ann. 36, pp. 81–85, January 15, 1927.
17. Mean sea level as affected by shore line changes: *Science*, new ser., vol. 66, pp. 60–61, July 15, 1927.
18. Physiography of Atlantic coast of North America (abstract): *Pan-Am. Geologist*, vol. 50, no. 4, pp. 311–312, November, 1928.

Johnson, George F.

1. The Mayo silver area, Yukon Territory: *Canadian Min. Jour.*, vol. 41, pp. 990–991, December 3, 1920.

Johnson, H. H.

1. The Kirkland Lake gold field [northern Ontario]: *Min. Mag.*, vol. 21, no. 1, pp. 29–30, 2 figs., July, 1919.

Johnson, Harry R.

1. (and Warren, Van Court). Geological and structural conditions of the San Gabriel Valley region: California, Dept. Public Works, Div. Water Rights, Bull. no. 5, pp. 73–100, 1927.

Johnson, Jesse Harlan.

1. An interesting occurrence of isomorphous siderite and calcite: *Pahasapa Quart.*, vol. 9, no. 1, p. 20, December, 1919.
2. Water pool calcite, an interesting cave mineral: *Pahasapa Quart.* [vol. 9, no. 2], pp. 61–64, 3 figs., February, 1920.
3. (and Snyder, J. P.). The caves of the Black Hills: *Pahasapa Quart.*, vol. 9, no. 4, pp. 175–187, 9 figs., June, 1920.
4. Bibliography of the geology of the Denver Basin of Colorado: Colorado School of Mines, Circular of Information, 7 pp. [1923].
5. Tertiary man; a partial summary of present opinion and knowledge on the subject: Colorado School of Mines, *Alumni Mag.*, vol. 13, no. 7, pp. 8–10, November, 1923.
6. Pleistocene man: Colorado School of Mines, *Alumni Mag.*, vol. 13, no. 11, pp. 8–13, March, 1924.
7. Bibliography of the geology of northwestern Colorado: Colorado School of Mines, Circular of Information, 7 pp. [1924].
8. Bibliography of the geology of southwestern Colorado: Colorado School of Mines, Circular of Information, 7 pp., September, 1924.
9. (and Waldschmidt, W. A.). Mining districts in Colorado: Colorado School of Mines, Circular of Information, 4 pp., Golden, Colo., November, 1924.
10. Bibliography of the geology of northeastern Colorado: Colorado School of Mines, 12 pp., January, 1925.
11. What a geologist means when he says "evolution": Colorado School of Mines, *Alumni Mag.*, vol. 14, no. 9, pp. 8–10, January, 1925.
12. (and Waldschmidt, W. A.). Famous Colorado mineral localities; Table Mountain and its zeolites: *Am. Mineralogist*, vol. 10, no. 5, pp. 118–120, May, 1925.
13. The geology of the Golden area, Colorado: Colorado School of Mines, *Quart.*, vol. 20, no. 3, 25 pp., 3 figs., 3 pls., July, 1925.

Johnson, Jesse Harlan—Continued.

14. Bibliography of the geology of southeastern Colorado: Colorado School of Mines, Circular of Information, 11 pp., August, 1925.
15. Bibliography of Colorado maps published by the State and Federal governments: Colorado School of Mines, Quart., vol. 20, no. 4, 40 pp., October, 1925.
16. Some present tendencies in geology; closer study of earth reveals that earlier periods are much more remote than previously believed; science is constantly changing: Colorado School of Mines Mag., vol. 15, no. 7, pp. 11-12, November, 1925.
17. Bibliography of geophysical principles, apparatus, and methods applied to prospecting: Colorado School of Mines Mag., vol. 15, no. 10, pp. 11-16, 21, February, 1926. [Also reprint, 7 pp.]
18. Bibliography of the geology and related subjects of northwestern Colorado (revised to June 1, 1926): Colorado School of Mines, Quart., vol. 21, no. 3, 52 pp., July, 1926.
19. Bibliography of the geology of north-central Colorado: Colorado School of Mines, Quart., vol. 22, no. 4, 38 pp., October, 1927.
20. A new locality for Fox Hills fossils in Colorado: Washington Acad. Sci., Jour., vol. 18, no. 11, pp. 305-306, June 4, 1928.
21. Bibliography of the geology of south-central Colorado: Colorado School of Mines, Quart., vol. 23, no. 4, 30 pp., October, 1928.

Johnson, J. P.

1. Meridian and base lines south of Lake St. Joseph, District of Thunder Bay: Ontario Dept. Mines, 33d Ann. Rept., vol. 33, pt. 6, pp. 40-48, illus., 1925.

Johnson, Meredith E. See Pennsylvania, 1.

1. Mineral resources of the Greensburg quadrangle, Westmoreland County, Pennsylvania: Pennsylvania Geol. Survey, 4th ser., Topog. and Geol. Atlas, no. 37, Greensburg quadrangle, 162 pp., 25 figs. (incl. maps), 9 pls., 4 maps, 1925.

Johnson, Roswell Hill. See also White, D., 1.

1. Variation in decline curves of various oil pools: Mining and Metallurgy, no. 157, sec. 1, p. 48 (abstract), sec. 8, 5 pp., January, 1920; Am. Inst. Min. and Met. Eng., Trans., vol. 65, pp. 365-373, 1921.
2. Water displacement in oil and gas sands: Mining and Metallurgy, no. 157, sec. 1, p. 50 (abstract), sec. 7, 4 pp., January, 1920. Eng. and Min. Jour., vol. 109, pp. 516-517, February 21, 1900. Discussion by David White, G. H. Ashley, E. W. Shaw, and H. W. Hixon, Am. Inst. Min. and Met. Eng., Trans., [preprint] no. 994, pp. 5-9, 1920, vol. 65, pp. 498-504, 1921.
3. (and Huntley, Stirling). A résumé of the Pennsylvania-New York oil field: Mining and Metallurgy, no. 158, sec. 1, p. 32 (abstract), sec. 23, 4 pp., February, 1920. Discussion by G. H. Ashley, Am. Inst. Min. and Metal. Eng. Trans., [preprint] no. 994, p. 3, 1920. Am. Inst. Min. and Met. Eng., Trans., vol. 65, pp. 151-155, 1921.
4. The cementation process in sandstone: Am. Assoc. Petroleum Geologists Bull., vol. 4, no. 1, pp. 33-35, 1920. Eng. and Min. Jour., vol. 110, no. 3, pp. 125-126, July 17, 1920.
5. The time factor in the accumulation of oil and gas: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 4, pp. 475-480 (with discussion by M. I. Goldman, p. 498), July-August, 1921.

Johnson, Roswell Hill—Continued.

6. Rôle of cross-waves in the formation of tomboloes and points (abstract with discussion by D. W. Johnson) : Geol. Soc. America, Bull., vol. 33, no. 1, p. 122, March 31, 1922.
7. A series of six radio talks on oil and gas: Pittsburgh, Univ., Radio Pub. no. 19, 44 pp., 1926.

Johnston, C. Stuart.

1. Polygonal weathering in igneous and sedimentary rocks: Am. Jour. Sci., 5th ser., vol. 13, pp. 440-444, 2 figs., May, 1927.

Johnston, Ivan Murray.

1. Expedition of the California Academy of Sciences to the Gulf of California in 1921; the botany [geology, pp. 952-957]: California Acad. Sci., Proc., 4th ser., vol. 12, no. 30, pp. 951-1218, May 31, 1924.

Johnston, Robert Angus Allister.

1. (and Ellsworth, H. V.). The Annaheim meteorite [Saskatchewan]: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 15, sec. 4, pp. 69-92, 3 figs., 14 pls., 1921.
2. (and Connor, M. F.). The Blithfield meteorite [Renfrew County, Ontario]: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 16, sec. 4, pp. 187-194, 2 pls., 1922.

Johnston, William Alfred. See also Berry, 32; Twenhofel, 16; Uglow, 10.

1. Superficial deposits and soils of Winnepegosis area, Manitoba: Canada, Geol. Survey, Summ. Rept., 1918, pt. D, p. 11, 1920.
2. Late Pleistocene changes of level in northern Manitoba, Canada (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 131, March 31, 1920.
3. Winnepegosis and upper Whitemouth River areas, Manitoba; Pleistocene and Recent deposits: Canada, Geol. Survey, Mem. 128, 42 pp., 2 figs., 2 maps, 1921.
4. Pleistocene oscillations of sea level in the Vancouver region, British Columbia: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 15, sec. 4, pp. 9-19, 1921.
5. A late Pleistocene readvance of the ice sheets in the Vancouver region, British Columbia (abstract with discussion by J. H. Bretz and E. M. Burwash): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 51-52, March 31, 1921.
6. The occurrence of calcareous sandstone in the recent delta of Fraser River, British Columbia: Am. Jour. Sci., 5th ser., vol. 1, pp. 447-449, May, 1921.
7. The age of the recent delta of Fraser River, British Columbia: Am. Jour. Sci., 5th ser., vol. 1, pp. 450-453, May, 1921.
8. Sedimentation of the Fraser River delta: Canada, Geol. Survey, Mem. 125, 46 pp., 9 pls. (incl. maps), 1921.
9. Sedimentation in the recent delta of Fraser River, British Columbia, Canada (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 52, March 31, 1921.
10. Placer mining in Barkerville area, British Columbia: Canada, Geol. Survey, Summ. Rept., 1921, pt. A, pp. 57-71, 1 fig., 1 pl., 2 maps, 1922.
11. Gold-dredging possibilities in the Barkerville area, British Columbia: Canadian Inst. Min. and Met., Monthly Bull., no. 118, pp. 151-167, February, 1922; Trans., vol. 25, pp. 165-182 [1923].

Johnston, William Alfred—Continued.

12. The character of the stratification of the sediments in the recent delta of Fraser River, British Columbia, Canada: *Jour. Geology*, vol. 30, no. 2, pp. 115-129, 2 figs., February-March, 1922.
13. Notes on prospecting in the Cariboo, British Columbia: *Canadian Min. Jour.*, vol. 43, no. 22, pp. 338-339, June 2, 1922.
14. Placer deposits of Cedar Creek area, Cariboo district, British Columbia: *Canadian Min. Jour.*, vol. 43, no. 45, pp. 762-765, 2 figs., November 10, 1922.
15. Sedimentation in Lake Louise, Alberta, Canada: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 376-386, 1 fig., November, 1922. Abstract, *Science*, new ser., vol. 56, p. 174, August 11, 1922.
16. Imbricated structure in river gravels: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 387-390, 2 figs., November, 1922.
17. Geology of Fraser River Delta map area [British Columbia]: Canada. Geol. Survey, Mem. 135, 87 pp., 6 pls., map, 1923.
18. Placer mining in Cedar Creek area, British Columbia: Canada, Geol. Survey, Summ. Rept., 1922, pt. A, pp. 68-81, 2 figs., 1 pl., 1923.
19. Placers in Cobalt conglomerate: *Canadian Min. Jour.*, vol. 45, no. 2, p. 56, January 11, 1924.
20. Cedar Creek placers [Cariboo district, British Columbia]: *Canadian Min. Jour.*, vol. 46, no. 5, pp. 117-119, 2 figs., January 30, 1925.
21. Gold dredging on Fraser River [British Columbia]: *Canadian Min. Jour.*, vol. 46, no. 9, pp. 229-232, 1 fig., February 27, 1925.
22. (and Uglow, W. L.). Placer and vein gold deposits of Barkerville, Cariboo district, British Columbia: Canada, Geol. Survey, Mem. 149, 246 pp., 33 figs., 15 pls., map, 1926.
23. Gold placers of Dease Lake area, Cassiar district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 33-74, 5 figs., 3 pls., 1926.
24. The Pleistocene of Cariboo and Cassiar districts, British Columbia, Canada: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 20, pt. 2, sec. 4, pp. 137-147, 1926.
25. Lack of evidence on the Pacific coast of Canada for a recent sinking of ocean level: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 249-253, September, 1926.
26. The age of the Upper Great Gorge of Niagara River: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 22, sec. 4, pp. 13-29, 3 figs., March, 1928.

Johnston, William Drumm, jr.

1. Fossil hunting in the White River badlands: *Sci. Monthly*, vol. 22, no. 3, pp. 200-214, 9 figs., March, 1926.
2. Marcasite inclusions in fluorite from the central Kentucky barite-fluorite-calcite veins: *Am. Mineralogist*, vol. 11, no. 7, pp. 174-180, 4 figs., July, 1926; abstract, *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 171, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 158, March, 1925.
3. Ants as prospectors: *Science*, new ser., vol. 68, p. 157, August 17, 1928.
4. Fluorspar in New Mexico: *New Mexico School of Mines, State Bur. Mines and Min. Res., Bull.* no. 4, 128 pp., 40 figs., map, 1928.

Joly, John.

1. The age of the earth: *Sci. Monthly*, vol. 16, no. 2, pp. 205-216, 2 figs., February, 1923.

Joly, John—Continued.

2. Continental movement. In *Theory of continental drift*, pp. 88–89, Am. Assoc. Petroleum Geologists, 1928.

Jonas, Anna Isabel. See also Knopf, E. B., 3; Stose, 15, 18, 21, 26, 27, 28.

1. (and Knopf, E. B.). *Stratigraphy of the metamorphic rocks of southeastern Pennsylvania and Maryland (abstract)*: Washington Acad. Sci., Jour., vol. 11, no. 18, pp. 446–447, November 4, 1921.
2. *Rocks of the McCalls Ferry quadrangle, Pennsylvania*: Pennsylvania, Bur. Topographic and Geol. Survey, Bull. no. 62, 6 pp., map, February 3, 1923 [mimeographed].
3. *Rocks of the Quarryville quadrangle, Pennsylvania*: Pennsylvania, Bur. Topographic and Geol. Survey, Bull. no. 75, 9 pp., map, April 25, 1923.
4. *Pre-Cambrian rocks of the western Piedmont of Maryland*: Geol. Soc. America, Bull., vol. 35, no. 2, pp. 355–363, 1 fig., June 30, 1924; abstract, with discussion by C. P. Berkey and Arthur Keith, vol. 35, no. 1, pp. 90–91, March 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 145, March, 1924.
5. (and Stose, George W.). *Geology and mineral resources of the New Holland quadrangle, Pennsylvania*: Pennsylvania Geol. Survey, 4th ser., Topog. and Geol. Atlas, no. 178, New Holland quadrangle, 40 pp., 5 pls., 2 maps, 1926.
6. (and Knopf, E. B.). *Summary of the pre-Cambrian geology of Pennsylvania and Maryland (abstract)*: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 111–112, March 30, 1927.
7. *Summary of the pre-Cambrian geology of Virginia to the James River (abstract)*: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 112–113, March 30, 1927.
8. *Geologic reconnaissance in the Piedmont of Virginia*: Geol. Soc. America, Bull., vol. 38, no. 4, pp. 837–846, 1 fig. (map), December 30, 1927; abstract, no. 1, pp. 118–119, March 30, 1927; *Pan. Am. Geologist*, vol. 47, no. 1, pp. 69–70, February, 1927.

Jones, Arthur Taber.

1. *The temperatures of meteorites*: *Science*, new ser., vol. 56, pp. 169–170, August 11, 1922.
2. *The temperature of a black spherical meteorite*: *Am. Jour. Sci.*, 5th ser., vol. 5, pp. 247–255, March, 1923.

Jones, Austin E. See Byerly, 12, 16.

Jones, Edward Leroy, jr. See also Pardee, 4; Umpleby, 3.

1. *A reconnaissance of the Pine Creek district, Idaho*: U. S. Geol. Survey, Bull. 710, pp. 1–36, 1 pl. (map), August 27, 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 9, no. 20, p. 637, December 4, 1919.
2. *Deposits of manganese ore in New Mexico*: U. S. Geol. Survey, Bull. 710, pp. 37–60, 1 fig. (map), October 21, 1919.
3. (and Ransome, F. L.). *Deposits of manganese ore in Arizona*: U. S. Geol. Survey, Bull. 710, pp. 93–184, 6 pls. (incl. maps), 8 figs., January 29, 1920.
4. *Deposits of manganese ore in southeastern California*: U. S. Geol. Survey, Bull. 710, pp. 185–208, 1 pl. (map), December 30, 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 10, no. 16, pp. 470–471, October 4, 1920.

Jones, Edward Leroy, jr.—Continued.

5. A deposit of manganese ore in Wyoming: U. S. Geol. Survey, Bull. 715, pp. 57-59, September 18, 1920. Abstract by J. D. Sears, Washington Acad. Sci., Jour., vol. 11, no. 16, p. 392, October 4, 1921.
6. Some deposits of manganese ore in Colorado: U. S. Geol. Survey, Bull. 715, pp. 61-72, September 17, 1920; abstract by J. D. Sears, Washington Acad. Sci., Jour., vol. 11, no. 16, p. 393, October 4, 1921.
7. Manganese deposits of the Colorado River desert region (abstract): Washington Acad. Sci., Jour., vol. 9, no. 13, pp. 384-385, July 19, 1919.

Jones, Ernest Lester.

1. Earthquake investigation in the United States: U. S. Coast and Geodetic Survey, serial no. 304, 27 pp., 8 figs., 1925.
2. Seismological work of the U. S. Coast and Geodetic Survey: Seismological Soc. America, Bull., vol. 15, no. 2, pp. 79-83, June, 1925.
3. Science and the earthquake peril: Franklin Inst., Jour., vol. 201, no. 5, pp. 563-596, 19 figs., May, 1926.
4. The seismological work of the United States Coast and Geodetic Survey (abstract): Seismological Soc. America, Bull., vol. 16, no. 2, pp. 154-155, June, 1926.

Jones, Grove B.

1. (and Brill, J. Bayard). Soil survey of Benton County, Indiana: Indiana, Dept. Geology and Nat. Res., 41st Ann. Rept., pp. 28-44, map, 1917.

Jones, I. W.

1. Carbon ratios as an index of oil and gas in western Canada: Econ Geology, vol. 23, no. 4, pp. 353-380, 2 figs., June-July, 1928.

Jones, J. Claude. See also Stone, 11.

1. Suggestive evidence on the origin of petroleum and oil shale: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 1, pp. 67-72, January-February, 1923.
2. The geologic history of Lake Lahontan: Carnegie Inst. Washington, Pub. no. 352 (Quaternary climates), pp. 1-50, 8 figs., 6 pls., July, 1925; abstract, Chicago, Univ., Abstracts of Theses, Sci. Ser., vol. 1, pp. 289-296, October, 1925.
3. The geology of the deposit of dumortierite in Humboldt Queen Canyon, Pershing County, Nevada; petrography; origin of the deposit: Nevada, Univ., Bull., vol. 22, no. 2 (Mackay School of Mines, Bull. on Dumortierite), pp. 23-26, 31-32, 33-34, March 15, 1928.
4. Age of Lake Lahontan (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 306-307, May, 1928.

Jones, O. C.

1. (and Hubbard, G. D.). Dynamics of the lithosphere: Ohio Jour. Sci., vol. 22, no. 7, pp. 193-208, May, 1922.

Jones, Owen Thomas.

1. The Ordovician-Silurian boundary in Britain and North America: Jour. Geology, vol. 33, no. 4, pp. 371-388, May-June, 1925; abstract, British Assoc. Adv. Sci., Rept. 92d Meeting, pp. 393-394, 1925; Pan-Am. Geologist, vol. 42, no. 4, p. 316, November, 1924.
2. Notes on the Silurian rocks of Arisaig, Nova Scotia: Am. Jour. Sci., 5th ser., vol. 11, pp. 119-125, February, 1926.

Jones, Philip M.

1. The origin of the prairie: *Science*, new ser., vol. 66, pp. 329-330, October 7, 1927.

Jones, R. H. B. See also Emmons, R. C., 2.

1. Geology and ore deposits of Hudson Bay Mountain, Coast district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 120-143, 1 pl., map, 1926.

Jones, Richard A.

1. The relation of the Reynosa Escarpment to the oil and gas fields of Webb and Zapata counties, Texas (with discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 5, pp. 532-545, 1 fig., September-October, 1923
2. Large gas well in Jim Hogg County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 5, pp. 676-677, September-October, 1924.
3. A reconnaissance study of the Salado arch, Nuevo Leon and Tamaulipas, Mexico: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 1, pp. 123-133, 1 fig., January-February, 1925.
4. An outcrop of surface oil sand in the Permian "red beds" of Coke County, west Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 8, pp. 1215-1216, 1 fig., November, 1925.
5. Practical application of paleontology to the oil industry: *Oil Weekly*, vol. 39, no. 13, pp. 37, 40, 76-77, December 18, 1925.
6. Discoveries renew interest in salt domes of southwest Texas: *Oil Weekly*, vol. 40, no. 3, pp. 32-34, 36, 2 figs., January 8, 1926.
7. Subsurface Cretaceous section of southwest Bexar County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 8, pp. 768-774, August, 1926.
8. Life of ocean competent original source of oil: *Oil Weekly*, vol. 45, no. 11, pp. 29-30, 42, 2 figs., June 3, 1927.
9. Complex oceanic chemistry initial factor in oil formation: *Oil Weekly*, vol. 46, no. 4, pp. 39-41, 88, 90, 92, 96, July 15, 1927.
10. Dissemination almost universal—accumulations rare; migration and concentration of oil deposits still one of the greatest scientific problems: *Oil Weekly*, vol. 46, no. 12, pp. 33-36, 3 figs., September 9, 1927.
1. Evidence for recent uplift on Gulf [of Mexico coast, Texas]: *Oil and Gas Jour.*, vol. 26, no. 46, pp. 82, 115-116, 118, 121-122, 125-126, 129, 5 figs., April 5, 1928.

Robert W.

Geology of the Catskill Portland-cement region [New York]: *Am. Ceramic Soc., Jour.*, vol. 2, no. 11, pp. 870-882, 11 figs., 2 pls. (maps), November, 1919.

2. Geology for Portland cement in Greene County, New York: *Eng. and Mining Jour.-Press*, vol. 121, no. 20, pp. 805-806, 4 figs., May 15, 1926.

Jones, W. H.

1. Statistical summary of the mineral production of Alabama for 1917: *Alabama Geol. Survey, Bull.* no. 21, 128 pp., 1920.
2. Statistical summary of the mineral production of Alabama for 1923: *Alabama Geol. Survey, Bull.* no. 29, 106 pp., 1925.
3. Preliminary list of economic minerals and rocks of Alabama: *Alabama Geol. Survey, Bull.* no. 30, 15 pp., May 1, 1925.

Jones, Walter Bryan—Continued.

4. Index to the mineral resources of Alabama: Alabama Geol. Survey, Bull. no. 28, 250 pp., 15 figs. (maps), 42 pls., 1926.
5. Statistics of the mineral production of Alabama for 1924: Alabama, Geol. Survey, Bull. no. 32, 123 pp., 1926.
6. Bauxite in Alabama, with a special discussion of the Margerum district: Econ. Geology, vol. 21, no. 8, pp. 792-802, 2 figs., December, 1926.
7. Petroleum products in shallow wells in Alabama: Alabama, Geol. Survey, Circ. 4, 33 pp., 5 figs., 4 pls., July, 1927.
8. Eugene Allen Smith: Eng. and Min. Jour., vol. 124, no. 25, p. 993, December 17, 1927.
9. Eugene Allen Smith: Science, new ser., vol. 67, pp. 7-9, January 6, 1928.
10. Geology of the Coastal Plain of Alabama (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 273, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 3, pp. 235-237, April, 1928.
11. Statistics of the mineral production of Alabama for 1925: Alabama, Geol. Survey, Bull. no. 34, 185 pp., 1928.
12. Summary of the distribution and occurrence of the rock-asphalt deposits of Alabama: Alabama, Geol. Survey, Circ. 5, 19 pp., 7 pls., June, 1928.
13. Outlines of Alabama geology: Pan-Am. Geologist, vol. 50, no. 1, pp. 7-22, 2 figs., August, 1928.

Jones, Wellington Downing.

1. (and Whittlesey, Derwent S.). An introduction to economic geography: Volume I, Natural environment as related to economic life. 375 pp., 366 figs. Chicago, Illinois, The University of Chicago Press [c. 1925].

Jones, William F.

1. The relation of oil pools to ancient shore lines: Econ. Geology, vol. 15, no. 1, pp. 81-87, 1 fig., January-February, 1920.
2. A critical review of Chamberlin's Groundwork for the study of megadiastrophism: Am. Jour. Sci., 5th ser., vol. 3, pp. 393-413, June, 1922.
3. Aspectos geológicos generales de la región de Tabasco en su relación con la existencia de petróleo: Bol. Petróleo, Mexico, vol. 17, no. 5, pp. 349-352, May, 1924.
4. Replacement or displacement by dikes [Medford area, eastern Massachusetts]: Eng. and Min. Jour.-Press, vol. 121, no. 6, p. 250, February 6, 1926.

Jones, William Richard.

1. The recent discovery of cassiterite in British Honduras: Min. Mag., vol. 31, no. 4, pp. 206-208, 3 figs. (incl. map), October, 1924.

Joralemon, Ira B.

1. The microscope and the decadence of geology: Eng. and Min. Jour.-Press, vol. 118, no. 8, p. 304, August 23, 1924.

Jordan, David Starr.

1. Fossil fishes of southern California; I, Fossil fishes of the Solidad deposits, by David Starr Jordan; II, Fossil fishes of the Miocene (Monterey) formations, by David Starr Jordan and James Zacheus Gilbert; III, Fossil fishes of the Pliocene formations, by David Starr Jordan and James Zacheus Gilbert: Leland Stanford Junior University Pub., Univ. ser., 98 pp., 31 pls., 1919.

Jordan, David Starr—Continued.

2. (and Gilbert, James Zaccheus). Fossil fishes of diatom beds of Lompoc, California: Leland Stanford Junior University Pub., Univ. ser., 44 pp., 29 pls., February, 1920.
3. A Miocene catastrophe [fossil fish, Santa Barbara County, California]: Natural History, vol. 20, no. 1, pp. 18–22, 5 figs., January–February, 1920.
4. An ancient moonfish [*Lampris zatima*, Lompoc, California]: Sci. Monthly, vol. 11, no. 5, pp. 470–473, 3 figs., November, 1920.
5. The fish fauna of the California Tertiary: Stanford Univ. Pub., Univ. ser., Biological Sciences, vol. 1, no. 4, 300 pp., 57 pls., 1921.
6. The Miocene shore fishes of California: Sci. Monthly, vol. 13, no. 5, pp. 460–464, 4 figs., November, 1921.
7. John Casper Branner: Science, new ser., vol. 55, pp. 340–341, March 31, 1922.
8. Description of a new species of fossil herring, *Quisque bakeri*, from the Texas Miocene: Am. Jour. Sci., 5th ser., vol. 3, pp. 249–250, 1 fig., April, 1922.
9. Some sharks' teeth from the California Pliocene: Am. Jour. Sci., 5th ser., vol. 3, pp. 338–342, 9 figs., May, 1922.
10. A classification of fishes including families and genera as far as known: Stanford Univ. Pub., Univ. ser., Biological Sciences, vol. 3, no. 2, 243, x pp., 1923.
11. (and Hannibal, Harold). Fossil sharks and rays of the Pacific slope of North America: Southern California Acad. Sci., Bull., vol. 22, pt. 2, pp. 27–68, 5 figs., 10 pls., July, 1923.
12. Description of Miocene fishes from southern California: Southern California Acad. Sci., Bull., vol. 23, pt. 2, pp. 42–50, 8 figs., March–April, 1924.
13. Description of a recently discovered fossil sculpin from Nevada regarded as *Cottus beldingi*: U. S. Nat. Mus., Proc., vol. 65, art. 6, 2 pp., 1 pl., September 12, 1924.
14. A collection of fossil fishes in the University of Kansas from the Niobrara formation of the Cretaceous: Kansas Univ. Sci. Bull., vol. 15, no. 6, pp. 219–245, 11 pls., December, 1924.
15. The fossil fishes of the Miocene of southern California: Stanford Univ. Pub., Univ. ser., Biol. Sciences, vol. 4, no. 1, 51 pp., 21 pls., 1925.
16. New sharks from the Temblor group in Kern County, California: California Acad. Sci., Proc., 4th ser., vol. 15, no. 8, pp. 257–261, 1 pl., April 26, 1926.
17. The fossil fishes of the Miocene of southern California; contribution no. 9: Stanford Univ. Pub., Biol. Sci., vol. 5, no. 2, pp. 89–99, 4 pls., 1927.
18. *Kindleia*, a new genus of cichlid fishes from the Upper Cretaceous of Alberta: Canadian Field-Nat., vol. 41, no. 7, pp. 145–147, 14 figs., October, 1927.
19. Note on *Kindleia* and *Stylomyleodon* (fossil fish from Cretaceous deposits of Alberta): Canadian Field Nat., vol. 42, no. 2, p. 47, February, 1928.

Jordan, Eric Knight. See also Hertlein, 4.

1. Quaternary and recent molluscan faunas of the west coast of Lower California: Southern California Acad. Sci., Bull., vol. 23, pt. 5, pp. 145–156, October 25, 1924.

Jordan, Eric Knight—Continued.

2. (and Hertlein, Leo George). A Pliocene fauna from Maria Madre Island, Mexico; California Acad. Sci., Proc., 4th ser., vol. 15, no. 4, pp. 209-216, 1 pl., April 26, 1926.
3. Molluscan fauna of the Pleistocene of San Quintin Bay, Lower California: California Acad. Sci., Proc., 4th ser., vol. 15, no. 7, pp. 241-254, 1 fig., 1 pl., April 26, 1926.
4. (and Hertlein, Leo George). Contribution to the geology and paleontology of the Tertiary of Cedros Island and adjacent parts of Lower California: California Acad. Sci., Proc., 4th ser., vol. 15, no. 14, pp. 409-464, 1 fig., 8 pls., July 22, 1926.

Juárez, J. Vicente.

1. En que forma se encuentra el petróleo en el subsuelo?: Bol. Petróleo, vol. 24, no. 2, pp. 141-145, 2 pls., August, 1927.

Juday, Chancey. See also Twenhofel, 29.

Kaiser, C. L.

1. The minor oil fields of Kern County; Wheeler Ridge field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 9, no. 12, pp. 25-29, 2 pls., June, 1924.
2. The minor oil fields of Kern County; Poso Creek field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 10, no. 1, pp. 19-22, 1 pl. (map), July, 1924.

Kalb, Georg.

1. Erzmikroskopische Untersuchung des Castillit: Centralbl. Mineralogie, no. 18, pp. 545-547, 3 figs., September 15, 1923. Examen microscópico de la castillita: Soc. cient. "Antonio Alzate," Mem. y rev., t. 44, nos. 3-8, pp. 351-354, 3 figs., 1925.

Kato, Takeo.

1. The problem of the cupriferous pyritic deposits: Econ. Geology, vol. 20, no. 1, pp. 97-100, January-February, 1925.
2. Replacement copper ore deposits in quartzite: Econ. Geology, vol. 21, no. 4, pp. 394-396, June-July, 1926.

Katz, Frank James. See also Stose, 1.

1. Garnet in North Carolina and the market for abrasive garnet: Eng. and Min. Jour., vol. 107, pp. 903-906, 1 fig., May 24, 1919.

Kauenhowen, W.

1. Geologie und Technik der nordamerikanischen Helium-Vorkommen: Petroleum, Zeitschr. . . . , Berlin-Wien, Bd. 20, no. 1, pp. 3-6, 1 fig., January 1, 1924.

Kay, George Frederick. See also Diller, 12; Stone, 11.

1. Twenty-fifth annual report of the State geologist; administrative report: Iowa Geol. Survey, vol. 27, pp. 1-11 [1920].
2. Mineral production in Iowa for 1916: Iowa Geol. Survey, vol. 27, pp. 13-32 [1920].
3. Some large boulders in the Kansan drift of southern Iowa: Iowa Geol. Survey, vol. 27, pp. 345-353, 5 figs. [1920].
4. (and Pearce, J. Newton). The origin of gumbotil: Jour. Geology, vol. 28, no. 2, pp. 89-125, 1 fig. (map), February-March, 1920.

Kay, George Frederick—Continued.

5. Further discussion of the Aftonian gravels and their relation to the drift sheets in the region about Afton Junction and Thayer, Iowa (abstract) : *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 132-133, March 31, 1920.
6. Significance of the relation of proboscidean remains to the surface of Nebraskan gumbotil, near Osceola, Clarke County, Iowa (with discussion by James H. Lees) : *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 80-83, March 31, 1921.
7. The glacial period; its record in Iowa (abstract) : *Science, new ser.*, vol. 56, p. 174, August 11, 1922.
8. Comparative study of the Nebraskan and Kansan tills in Iowa (abstract) : *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 115, March 31, 1922.
9. Twenty-eighth and twenty-ninth annual reports of the State geologist: *Iowa Geol. Survey*, vol. 29, pp. iii-xx [1924].
10. Recent studies of the Pleistocene in western Iowa (abstract, with discussion by W. C. Alden) : *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 71-74, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, pp. 139-140, March, 1924.
11. Some recent interpretations of glacial deposits in Iowa (abstract) : *Pan-Am. Geologist*, vol. 42, no. 1, p. 68, August, 1924; *British Assoc. Adv. Sci.*, Rept. 92d Meeting, p. 381, 1925.
12. Some recent Pleistocene studies in Iowa [particularly the Iowan till] (abstract) : *Pan-Am. Geologist*, vol. 46, no. 5, p. 404, December, 1926.
13. Rock resources of Iowa : *Iowa Geol. Survey*, vol. 32, pp. 51-65, 13 figs. (incl. map), 1927.
14. Loveland loess; post-Illinoian, pre-Iowan in age : *Science, new ser.*, vol. 68, pp. 482-483, November 16, 1928.
15. The relative ages of the Iowan and Illinoian drift sheets : *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 497-518, 6 figs., December, 1928.
16. History of the investigations and classifications of the Pleistocene deposits of Iowa : *Iowa Geol. Survey*, vol. 34, 67 pp., 2 figs., 1928 (preprint).

Kay, George Marshall.

1. Stratigraphy and paleontology of the Decorah formation in northeastern Iowa (abstract) : *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 225, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 3, p. 236, April, 1927.
2. Divisions of the Decorah formation [in northeastern Iowa] : *Science, new ser.*, vol. 67, p. 16, January 6, 1928.

Keele, Joseph.

1. Mesozoic clays in northern Ontario : *Canada, Geol. Survey, Summ. Rept.*, 1919, pt. G, pp. 13-19, 1920.
2. Clay and shale deposits of the Abitibi and Mattagami rivers : *Ontario Bur. Mines, 29th Ann. Rept.*, vol. 29, pt. 2, pp. 31-55, 1 fig., 1920.
3. Mesozoic clays and sands in northern Ontario : *Canada, Geol. Survey, Summ. Rept.*, 1920, pt. D, pp. 35-39, 1 fig., 1921.
4. Mesozoic clays and sands in northern Ontario : *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 15, sec. 4, pp. 25-46, 1 fig., 1921.
5. (and Cole, L. H.). Report on structural materials along the St. Lawrence River between Prescott, Ontario, and Lachine, Quebec : *Canada, Dept. Mines, Mines Branch*, 119 pp., 5 figs., 30 pls., 3 maps, 1922.

Keele, Joseph—Continued.

6. Notes on clays of the Missinaibi River: Ontario Dept. Mines, 30th Ann. Rept., vol. 30, pt. 1, pp. 171-175, 4 figs., 1922.
7. Notes on clays of the Missinaibi River: Ontario Dept. Mines, 31st Ann. Rept., vol. 31, pt. 10, pp. 95-96, 1923.
8. Preliminary report on the clay and shale deposits of Ontario: Canada, Geol. Survey, Mem. 142, 176 pp., 11 figs., 9 pls., 1924.

Keeley, Frank J.

1. Additional notes on the Deal [Monmouth County, New Jersey] meteorite: Acad. Nat. Sci. Philadelphia, Proc., vol. 72, pt. 3, pp. 358-359, 1921.
2. Additional notes on igneous rocks of Ogunquit, Maine: Acad. Nat. Sci. Philadelphia, Proc., vol. 75, pp. 105-109, 1924.

Keeney, Robert M.

1. Uranium and vanadium in 1918: Colorado School of Mines Mag., vol. 9, no. 10, pp. 273-278, October, 1919.

Keith, Arthur. See also Bowie, 13; Jonas, 4; LaForge, 4; Willis, B., 1.

1. Cambrian succession of northwestern Vermont (abstract with discussion by E. C. Gordon): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 123-124, March 31, 1922.
2. Cambrian succession of northwestern Vermont: Am. Jour. Sci., 5th ser., vol. 5, pp. 97-139, 1 fig. (map), February, 1923; Vermont, State Geologist, Fourteenth Rept., 1923-24, pp. 105-136, 1924.
3. Outlines of Appalachian structure: Geol. Soc. America, Bull., vol. 34, no. 2, pp. 309-380, 1 pl. (map), June 30, 1923.
4. Memorial of Jay Backus Woodworth: Geol. Soc. America, Bull., vol. 37, no. 1, pp. 134-141, 1 pl. (portr.), March 30, 1926.
5. The geology of the St. Lawrence earthquake of February 28, 1925 (abstract): Seismological Soc. America, Bull., vol. 16, no. 2, p. 158, June, 1926.
6. Great Smoky overthrust (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 154-155, March 30, 1927.
7. Recent series of New England earthquakes (abstract): Seismological Soc. America, Bull., vol. 17, no. 3, pp. 191-192, September, 1927.
8. Recently determined overthrusts in the Appalachians (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 178, March 30, 1928; Pan-Am Geologist, vol. 49, no. 2, pp. 139-140, March, 1928.
9. Structural symmetry in North America: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 321-385, 22 figs., March 30, 1928.

Kelley, P. K.

1. The Sulphur salt dome, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 3, pp. 479-496, 7 figs., 1 pl., May-June, 1925; Geology of salt dome oil fields, pp. 452-469, 7 figs., 1 pl., 1926.

Kellogg, A. E.

1. Cinnabar ore in Jackson County, Oregon: Eng. and Min. Jour., vol. 107, p. 787, 2 figs., May 3, 1919.
2. Placer mining in Oregon [Waldo district, Josephine County]: Eng. and Min. Jour., vol. 108, pp. 90-91, July 19, 1919.
3. Oil developments in Rogue River valley, Oregon: Eng. and Min. Jour., vol. 111, no. 22, pp. 913-914, 1 fig., May 28, 1921.
4. Cobalt in Jackson County, Oregon: Eng. and Min. Jour., vol. 112, no. 17, p. 650, October 22, 1921.

Kellogg, A. E.—Continued.

5. Platinum in the quartz veins of southwest Oregon: Eng. and Min. Jour.-Press, vol. 113, no. 23, p. 1000, June 10, 1922.
6. Quicksilver in the Gold Hill, Oregon, District: Min. Jour., Phoenix, Ariz., vol. 11, no. 8, pp. 7, 14-15, September 15, 1927.
7. Origin of manganese in southwestern Oregon: Min. Jour., Phoenix, Ariz., vol. 11, no. 13, pp. 7, 13, November 30, 1927.
8. Auriferous gravels of southwest Oregon: Min. Jour., Phoenix, Ariz., vol. 11, no. 20, pp. 3-6, 54-55, 3 figs., March 15, 1928.
9. Origin of copper in southwestern Oregon: Min. Jour., Phoenix, Ariz., vol. 12, no. 2, pp. 9-10, June 15, 1928.
10. Llano de Oro placers, Waldo district, Oregon: Min. Jour., Arizona, vol. 12, no. 4, pp. 9-11, July 15, 1928.

Kellogg, Remington. See also Gregory, W. K., 21; Merriam, 25.

1. A new pinniped [*Pliopedia pacifica*] from the upper Pliocene of California: Jour. Mammalogy, vol. 2, no. 4, pp. 212-226, 13 figs., November, 1921.
2. Pinnipeds from Miocene and Pleistocene deposits of California: California, Univ., Dept. Geology, Bull., vol. 13, no. 4, pp. 23-132, 6 figs., April 14, 1922.
3. Description of the skull of *Megaptera miocaena*, a fossil humpback whale from the Miocene diatomaceous earth of Lompoc, California: U. S. Nat. Mus., Proc., vol. 61, art. 14, pp. 1-18, 4 pls., 10 figs., 1922.
4. Description of two squalodonts recently discovered in the Calvert Cliffs, Maryland; and notes on the shark-toothed cetaceans: U. S. Nat. Mus., Proc., vol. 62, art. 16, 69 pp., 3 figs., 20 pls., 1923.
5. Description of an apparently new toothed cetacean from South Carolina: Smithsonian Misc. Coll., vol. 76, no. 7, 7 pp., 2 pls., July 25, 1923.
6. A fossil porpoise from the Calvert formation of Maryland: U. S. Nat. Mus., Proc., vol. 63, art. 14, 39 pp., 18 pls., 1924.
7. Description of a new genus and species of whalebone whale from the Calvert Cliffs, Maryland: U. S. Nat. Mus., Proc., vol. 63, art. 15, 14 pp., 6 pls., 1924.
8. Tertiary pelagic mammals of eastern North America: Geol. Soc. America, Bull., vol. 35, no. 4, pp. 755-766, December, 1924.
9. A fossil physeteroid cetacean from Santa Barbara County, California: U. S. Nat. Mus., Proc., vol. 66, art. 27, 8 pp., 2 pls., February 28, 1925.
10. Additions to the Tertiary history of the pelagic mammals on the Pacific coast of North America: Carnegie Inst. Washington, Pub. no. 348, 120 pp., 29 figs., 13 pls., April, 1925.
11. On the occurrence of remains of fossil porpoises of the genus *Eurhiodelphis* in North America: U. S. Nat. Mus., Proc., vol. 66, art. 26, 40 pp., 1 fig., 17 pls., May 23, 1925.
12. Supplementary observations on the skull of the fossil porpoise *Zarhachis flagellator* Cope: U. S. Nat. Mus., Proc., vol. 67, art. 28, 18 pp., 5 pls., February 24, 1926.
13. [Paleontological research on cetaceans]: Carnegie Inst. Washington, Year Book no. 25, 1925-6, pp. 405-407, December, 1926.
14. *Kentriodon pernix*, a Miocene porpoise from Maryland: U. S. Nat. Mus., Proc., vol. 69, art. 19, 55 pp., 20 figs., 14 pls., 1927.

Kellogg, Remington—Continued.

15. Study of the skull of a fossil sperm whale from the Temblor Miocene of southern California: Carnegie Inst. Washington, Pub. 346 (Contributions to paleontology), pp. 1-24, 9 pls., October, 1927.
16. Fossil pinnipeds from California: Carnegie Inst. Washington, Pub. 346 (Contributions to paleontology), pp. 25-37, 8 figs., October, 1927.

Kellum, Lewis Burnett.

1. The age of the Trent marl in North Carolina: Jour. Geology, vol. 33, no. 2 pp. 183-187, February-March, 1925.
2. Paleontology and stratigraphy of the Castle Hayne and Trent marls in North Carolina: U. S. Geol. Survey, Prof. Paper 143, 56 pp. 1 fig., 11 pls., 1926.

Kelly, R. B. See Bell, H. W., 2.

Kelly, Sherwin F. See also Leonardon, 1, 2.

1. Electrical prospecting in Canada: Canadian Inst. Min. and Met., Monthly Bull., no. 143, pp. 166-187, 14 figs., March, 1924.
2. The microstructure of anthracite and anthraxolite: Toronto, Univ., Studies, Geol. ser., no. 22, pp. 44-47, 1 pl., 1926.

Kelly, William A.

1. The Carboniferous fauna of Grand Ledge: Michigan Acad. Sci., Papers, vol. 8, pp. 293-295, 1928.

Kemnitzer, L. E.

1. The Salinas earthquake of December 27, 1924 [California]: Seismol. Soc. America, Bull., vol. 14, no. 4, pp. 230-232, 1 fig., December, 1924.

Kemnitzer, William.

1. The Chittenden earthquake of July 24, 1921 [California]: Seismol. Soc. America, Bull., vol. 11, nos. 3-4, pp. 189-190, 1 pl., September-December, 1921.
2. The Eagle Lake [Lassen County, California] earthquake of July 21, 1921: Seismol. Soc. America, Bull., vol. 11, nos. 3-4, pp. 192-193, 1 pl., September-December, 1921.

Kemp, James Furman, 1859-1926. See also Anderson, J. C., 2; Balk, 1; Hewett, 11; Lindgren, 18; Miller, B. L., 8; Mitchell, G. J., 5; Spurr, 20; Wheeler, H. A., 3.

1. Memorial of John Duer Irving: Geol. Soc. America, Bull., vol. 30, no. 1, pp. 37-42, portr., March 31, 1919.
2. Observations on a Florida sea beach with reference to oil geology: Econ. Geology, vol. 14, no. 4, pp. 302-323, 4 pls., June, 1919.
3. Structural and petrographic geology: Geol. Soc. America, Bull., vol. 31, no. 3, pp. 351-356, September 30, 1920.
4. Geology in the law: Econ. Geology, vol. 15, no. 3, pp. 259-265, April-May, 1920.
5. Memorial of Alexis Anastay Julien: Geol. Soc. America, Bull., vol. 31, no. 1, pp. 81-88, portr., March 31, 1920.
6. Memorial of Gaillard Sherburne Rogers: Geol. Soc. America, Bull., vol. 31, no. 1, pp. 97-100, portr., March 31, 1920.
7. Geology of the Mount Marcy quadrangle, Essex County, New York: New York State Mus. Bull., nos. 229-230, 86 pp., 14 figs., 25 pls., map, 1921.

Kemp, James Furman—Continued.

8. (and Billingsley, Paul). Sweet Grass Hills, Montana: Geol. Soc. America, Bull., vol. 32, no. 4, pp. 437-478, 14 figs. (incl. maps), 6 pls., December 1, 1921; abstract, vol. 31, no. 1, pp. 158-159, March 31, 1920.
9. The zonal distribution of ores: Econ. Geology, vol. 17, no. 1, pp. 46-48, January-February, 1922.
10. New features in structural geology of the anthracite basins [Wilkes-Barre region, Pennsylvania]: Am. Inst. Min. and Met. Eng., Trans. [pre-print] no. 1112, 15 pp., 15 figs., January, 1922; vol. 66, pp. 303-317, 15 figs., 1922; abstract, Mining and Metallurgy, no. 181, pp. 29-30, January, 1922.
11. Memorial of Henry Platt Cushing: Geol. Soc. America, Bull., vol. 33, no. 1, pp. 44-55, portr., March 31, 1922.
12. After-effects of igneous intrusion: Geol. Soc. America, Bull., vol. 33, no. 1, pp. 231-254, March 31, 1922; abstract, Eng. and Min. Jour.-Press, vol. 113, no. 8, pp. 338-339, February 25, 1922.
13. Isostasy and applied geology: Geol. Soc. America, Bull., vol. 33, no. 2, pp. 327-331, June 30, 1922.
14. Memorial of Levi Holbrook: Geol. Soc. America, Bull., vol. 34, no. 1, pp. 51-52, March 30, 1923.
15. On veins from intrusive magmas with contrasted contents of metals: Econ. Geology, vol. 18, no. 8, pp. 772-774, December, 1923.
16. Albert Reid Ledoux: Am. Inst. Min. and Met. Eng., Trans., vol. 70, pp. 1207-1212, portr., 1924.
17. Memorial of Horace Vaughn Winchell: Geol. Soc. America, Bull., vol. 35, no. 1, pp. 46-56, portr., March 30, 1924.
18. Edmund Otis Hovey, 1862-1924: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 24, no. 6, pp. 705-709, portr., November-December, 1924.
19. The pegmatites: Econ. Geology, vol. 19, no. 8, pp. 697-723, December, 1924.
20. Memorial of Edmund Otis Hovey: Geol. Soc. America, Bull., vol. 36, no. 1, pp. 85-100, portr., March 30, 1925.
21. (and Knight, S. H.). Pre-Cambrian geology north of Laramie, Wyoming (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, pp. 159-160, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 153, March, 1925.
22. First award of the Penrose medal [to T. C. Chamberlin]: Science, new ser., vol. 61, pp. 381-382, April, 10, 1925.
23. (and Alling, Harold L.). Geology of the Ausable quadrangle: New York State Mus. Bull., no. 261, 126 pp., 24 figs., 12 pls., map, June, 1925.
24. New methods for the study of granitic intrusives: Econ. Geology, vol. 20, no. 6, pp. 597-601, September-October, 1925.
25. Recent physiographic observations in the Laramie Range, Wyoming (abstract): Science, new ser., vol. 62, p. 520, December 4, 1925.
26. General geological relations of platinum: Eng. and Min. Jour.-Press, vol. 121, no. 18, pp. 717-719, May 1, 1926.
27. The international geological congresses: Econ. Geology, vol. 21, no. 7, pp. 708-711, November, 1926.
28. Introduction and review of the literature on the geology of the Virgin Islands: New York Acad. Sci., Scientific Survey of Porto Rico and the Virgin Islands, vol. 4, pt. 1, pp. 3-69, 1926.

Kendall, J. D.

1. The formation of ore bodies: Canadian Min. Inst., Trans., vol. 21, pp. 293-421, 64 figs. [1919].

Kendall, J. D.—Continued.

2. The formation of coal: Canadian Min. Inst., Monthly Bull., no. 86, pp. 600-606; no. 87, pp. 761-778; no. 88, pp. 877-882, 19 figs., June-August, 1919; Trans., vol. 22, pp. 250-283, 19 figs. [1920].

Kennedy, William.

1. The Bryan Heights salt dome, Brazoria County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 3, pp. 613-625, 6 figs., May-June, 1925; Geology of salt dome oil fields, pp. 678-690, 6 figs., 1926.

Kentucky Geological Survey. See also Dunn, P. H., 1; Eyl, 1, 2; Gardner, J. H., 4; Glenn, 10; Jillson, 88, 104; Mcfarlan, 1; Miller, A. M., 20, 21; Perry, E. S., 1; Robinson, L. C., 1; Sutton, 1, 2; Weller, 17.

1. Map of the structural geology of Breathitt County, Kentucky: Kentucky, Dept. Geology and Forestry, 1919. Scale 1:62,500.
2. Map of the structural geology of Knott County, by I. B. Browning: Kentucky, Dept. Geology and Forestry, 1919. Scale 1:62,500.
3. Map of the structural geology of Johnson County . . . by I. B. Browning: Kentucky Geol. Survey, Ser. 6, 1921. Scale 1:62,500.
4. Map of the structural geology of Magoffin County . . . by I. B. Browning: Kentucky Geol. Survey, Ser. 6, 1921. Scale, 1:62,500.
5. Map of the structural geology of Floyd County, Kentucky; structural geology by J. S. Hudnall: Kentucky Geol. Survey, Ser. 6, 1922. Scale 1:62,500.
6. Map of the structural geology of Martin County, Kentucky; structural geology by J. S. Hudnall: Kentucky Geol. Survey, Ser. 6, 1923. Scale, 1:62,500.
7. Map of Monroe County, Kentucky, by G. W. Pirtle [oil and gas data]: Kentucky Geol. Survey, Ser. 6, 1923. Scale, 1 inch=1 mile.
8. Map of the structural geology of Pike County, Kentucky; structural geology by J. S. Hudnall: Kentucky Geol. Survey, Ser. 6, 1923. Scale, 1:62,500.
9. Map of the Rockcastle River uplift in Laurel and Clay counties, Kentucky, by W. R. Jillson and J. S. Hudnall: Kentucky Geol. Survey, Ser. 6, 1923. Scale 1:62,500.
10. Map of the Williamsburg anticline in Whitley County, Kentucky, by W. R. Jillson and J. S. Hudnall [incl. geologic data]: Kentucky Geol. Survey, Ser. 6, 1923. Scale 1:62,500.
11. Map of the structural geology of Boyd County Kentucky; structural geology by J. S. Hudnall: Kentucky Geol. Survey, Ser. 6, 1924. Scale 1:62,500.
12. Map of the structural geology of parts of Cumberland, Monroe, and Clinton counties, Kentucky; structural geology by J. S. Hudnall and G. W. Pirtle: Kentucky Geol. Survey, Ser. 6, 1924. Scale 1 inch=1 mile.
13. Oil and gas map of Hancock County, Kentucky, by J. L. Bissell: Kentucky Geol. Survey, Ser. 6, 1924. Scale, 1:62,500.
14. Map of the structural geology of the region south of Irvine and Berea in Estill, Jackson, Lee, Madison, and Rockcastle counties, Kentucky: Kentucky Geol. Survey, Ser. 6, 1924. Scale, 1 inch=1 mile.
15. Structural map Isonville oil pool, Elliott County, Kentucky, by J. S. Hudnall and A. E. Williams: Kentucky Geol. Survey, Ser. 6, 1924. Scale, 1 inch= $\frac{1}{2}$ mile.

Kentucky Geological Survey—Continued.

16. Map of the structural geology of Leslie County, Kentucky . . . by J. S. Hudnall and others. Kentucky Geol. Survey, Ser. 6, 1924. Scale, 1:62,500.
17. Economic map of McLean County, Kentucky, by J. L. Bissell: Kentucky Geol. Survey, Ser. 6, 1924. Scale, 1:62,500.
18. Map of the subsurface structural geology of Martin County, Kentucky; structural geology by J. S. Hudnall: Kentucky Geol. Survey, Ser. 6, 1924. Scale, 1:62,500.
19. Map of Metcalfe County, Kentucky, by H. D. Crider [oil and gas data]: Kentucky Geol. Survey, Ser. 6, 1924. Scale, 1 inch=1 mile.
20. Topographic map of Muhlenberg County, Kentucky [incl. geologic data]: Kentucky Geol. Survey, Ser. 6, 1924. Scale, 1:62,500.
21. Map of the structural geology of the Paint Creek uplift in Floyd, Johnson, Magoffin, Morgan, Lawrence, and Elliott counties, Kentucky; structural geology by J. S. Hudnall and I. B. Browning: Kentucky Geol. Survey, Ser. 6, 1924. Scale, 1:62,500.
22. Map of the structural geology of Perry County, Kentucky; structural geology by J. S. Hudnall: Kentucky Geol. Survey, Ser. 6, 1924. Scale, 1:62,500.
23. Oil and gas map of Barren County, Kentucky, by W. C. Eyl: Kentucky Geol. Survey, Ser. 6, 1925. Scale, 1 inch=1 mile.
24. Map of the subsurface structural geology of Boyd County, by W. R. Jillson: Kentucky Geol. Survey, Ser. 6, 1925. Scale 1:62,500.
25. Oil and gas map of Boyd County, Kentucky, by W. R. Jillson: Kentucky Geol. Survey, Ser. 6, 1925. Scale 1:62,500.
26. Structural map of Carter County, Kentucky: Kentucky Geol. Survey, Ser. 6, 1925. Scale, 1 inch=1 mile.
27. Oil and gas map of Elliott County, Kentucky, by A. B. Williams: Kentucky Geol. Survey, Ser. 6, 1925. Scale, 1 inch=1 mile.
28. Reconnaissance map of the structural geology of Knox County, Kentucky; structural geology by C. V. Theis: Kentucky Geol. Survey, Ser. 6, 1925. Scale, 1:62,500.
29. Oil and gas map of Taylor County, Kentucky, by C. D. Hunter: Kentucky Geol. Survey, Ser. 6, 1925. Scale, 1 inch=1 mile.
30. Oil and gas map of Bracken County, Kentucky, by Evans McGraw and Earl Sherwood: Kentucky Geol. Survey, Ser. 6, 1926. Scale 1 inch=1 mile.
31. Map of Edmonson County, Kentucky [showing geologic data]: Kentucky Geol. Survey, Ser. 6, 1926. Scale, 1:62,500.
32. Map of Grayson County, Kentucky [showing geologic data]: Kentucky Geol. Survey, Ser. 6, 1926. Scale, 1 inch=1 mile.
33. Reconnaissance structural oil and gas map of Greenup County, Kentucky; Kentucky Geol. Survey, Ser. 6, 1926. Scale, 1 inch=1 mile.
34. Structural map of Lawrence County, Kentucky: Kentucky Geol. Survey, Ser. 6, 1926. Scale, 1 inch=1 mile.
35. Oil and gas map of Bath County, Kentucky, by Earl Sherwood: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
36. Map of the subsurface structural geology of the Bells Run anticline, Ohio County, Kentucky, by W. C. Eyl: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
37. Structural geological oil and gas map of Breathitt County, Kentucky, by I. B. Browning; second edition revised by W. R. Jillson: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.

Kentucky Geological Survey—Continued.

38. Reconnaissance map of the structural geology of Clay County, Kentucky, by C. V. Theis and others: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
39. Map of the structural geology of Harlan County, Kentucky, by R. Miller and S. Withers: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1:62,500.
40. Structural geological map of Henderson County, Kentucky, by C. V. Theis: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
41. Map of the areal and structural geology of Lee County, Kentucky, by W. C. Eyl: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
42. Map of the structural geology, fault pattern, of Lincoln County, Kentucky; geology by A. C. McFarlan and H. T. Richardson: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
43. Structural geological oil and gas map of Owsley County, Kentucky; geology by E. S. Perry: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
44. Oil and gas map of Powell County, Kentucky, by Evans C. McGraw: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
45. Oil and gas map of Wayne County, Kentucky, by F. H. Douglas: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
46. Map of the structural geology of Bell County, Kentucky . . . by D. Chisholm, R. Miller, and S. Withers: Kentucky Geological Survey, Ser. 6, 1928. Scale 1:62,500.
47. Map of Calloway County, Kentucky, by W. E. Bach: Kentucky Geol. Survey, Ser. 6, 1928. Scale 1 inch=1 mile.
48. Map of Carlisle County, Kentucky, by R. C. Bishop and A. Montgomery: Kentucky Geol. Survey, Ser. 6, 1928. Scale 1 inch=1 mile.
49. Map of the subsurface structural geology of Floyd County, Kentucky; structural geology by Raymond Miller and Spencer Withers: Kentucky Geol. Survey, Ser. 6, 1928. Scale 1:62,500.
50. Oil and gas map of Green County, Kentucky, by Evans C. McGraw: Kentucky Geological Survey, Ser. 6, 1928. Scale 1 inch=1 mile.
51. Map of Marshall County, Kentucky, by W. E. Bach and T. G. Strunk: Kentucky Geol. Survey, Ser. 6, 1928. Scale 1 inch=1 mile.
52. Map of lower Miller Creek, Estill County, Kentucky, showing available cement materials: Kentucky Geol. Survey, Ser. 6, 1928. Scale, 1 inch=1500 feet.
53. Map [and generalized stratigraphic section] of Nelson County, Kentucky, by S. Withers, R. Miller, and G. Briggs. Kentucky Geol. Survey, Ser. 6, 1928. Scale, 1 inch=1 mile.
54. Oil and gas map of Warren County, Kentucky, by W. C. Eyl: Kentucky Geol. Survey, Ser. 6, 1928. Scale, 1:62,500.

Kerr, Forrest A.

1. Dease Lake area, Cassiar district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 75-99, 1 fig., 1 pl., map, 1926.
2. Preliminary report on Stikine River area, British Columbia: Canada, Geol. Survey, Summ. Report, 1926, pt. A, pp. 14-34, 1 fig. (map), 1927.
3. The eastern contact zone of the coast range batholith on the Stikine River [British Columbia]: Canadian Min. and Met. Bull., no. 189, pp. 179-183, January, 1928.

Kerr, Paul F.

1. The determination of opaque ore minerals by X-ray diffraction patterns: *Econ. Geology*, vol. 19, no. 1, pp. 1-34, 6 figs., 2 pls., January-February, 1924.
2. A magmatic sulphide ore, Chichagof Island, Alaska: *Econ. Geology*, vol. 19, no. 4, pp. 369-376, 2 figs., June-July, 1924.
3. A simple rotation apparatus [for measuring axial angles]: *Am. Mineralogist*, vol. 9, no. 8, pp. 169-171, 1 fig., August, 1924.
4. (and Schenck, Hubert G.). Active thrust faults in San Benito County, California: *Geol. Soc. America, Bull.*, vol. 36, no. 3, pp. 465-494, 13 figs., September 30, 1925; abstract, no. 1, p. 157, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 152, March, 1925.
5. (and Cabeen, Charles K.). Electrical conductivity of ore minerals: *Econ. Geology*, vol. 20, no. 8, pp. 729-737, December, 1925.
6. The significance of strain structure in quartz from Ducktown, Tennessee: *Am. Mineralogist*, vol. 11, no. 8, pp. 206-209, 2 figs., August, 1926.
7. (and Schenck, Hubert G.). Significance of the Matilija overturn [Santa Ynez Mountains, California]: *Geol. Soc. America, Bull.*, vol. 39, no. 4, pp. 1087-1102, 4 figs., December 30, 1928; abstract, no. 1, p. 187, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 77, February, 1928.

Kerr-Lawson, D. E.

1. The crystallography of potassium fluozirconate: *Toronto, Univ., Studies, Geol. ser.*, no. 20, pp. 63-67, 3 figs., 1925.
2. Pleochroic haloes in biotite from near Murray Bay, Province of Quebec: *Toronto, Univ., Studies, Geol. ser.* no. 24, pp. 54-70, 4 figs., 4 pls., 1927.
3. Pleochroic haloes in biotite: *Toronto, Univ., Studies, Geol. ser.*, no. 27, pp. 15-27, 9 figs., 2 pls., 1928.

Kesler, L. W.

1. Oil and gas resources of Kansas in 1927: *Kansas State Geol. Survey, Min. Res. Circ. 1* (Kansas, Univ., Bull., vol. 29, no. 11), 60 pp., 6 figs., June 1, 1928

Kew, William Stephen Webster. See also Laughlin, 1.

1. Structure and oil resources of the Simi Valley, southern California: *U. S. Geol. Survey Bull.* 691, pp. 323-347, 4 pls. (incl map), 1 fig., April 9, 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 9, no. 15, pp. 441-442, September 19, 1919.
2. Geology of a part of the Santa Ynez River district, Santa Barbara County, California: *California, Univ., Dept. Geology, Bull.*, vol. 12, no. 1, pp. 1-21, 2 pls. (incl. map), 2 figs., November 20, 1919.
3. Cretaceous and Cenozoic Echinoidea of the Pacific coast of North America: *California, Univ., Dept. Geology, Bull.* vol. 12, no. 2, pp. 23-236, 40 pls., 5 figs., September 28, 1920.
4. Geologic formations of a part of southern California and their correlation: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 4, pp. 411-420, July-August, 1923.
5. Geologic evidence bearing on the Inglewood earthquake of June 21, 1920. *Seismol. Soc. America, Bull.*, vol. 13, no. 4, pp. 155-158, 1 fig., December, 1923.
6. Geology and oil resources of a part of Los Angeles and Ventura counties, California: *U. S. Geol. Survey, Bull.* 753, 202 pp., 7 figs., 17 pls. (incl. maps), 1924.

Kew, William Stephen Webster—Continued.

7. Faulting in the western part of San Gabriel Mountains (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 165-166, March 30, 1924.
8. A geologic summary of California oil fields: *Oil Bull.*, vol. 12, no. 1, pp. 33-35, 39, 41, 43, 1 pl., January, 1926.
9. Geologic and physiographic features in the San Pedro Hills. Los Angeles County, California: *Oil Bull.*, vol. 12, no. 5, pp. 513-518, 590, 3 figs., May, 1926.
10. Geologic sketch of Santa Rosa Island, Santa Barbara County, California: *Geol. Soc. America, Bull.*, vol. 38, no. 4, pp. 645-653, 1 pl. (map), December, 1927.
11. Geologic sketch of Santa Rosa Island, Ventura County, California (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 267, March 30, 1928.

Keyes, Charles Rollin. See also Beeson, 1; Boone County Hist. Soc., 1.

1. Tectonic adjustment of a rotating straticulate spheroid: *Am. Jour. Sci.*, 4th ser., vol. 47, pp. 108-112, 5 figs, February, 1919.
2. Provincial unity of continental interior coal fields: *Iowa Acad. Sci., Proc.* 1918, vol. 25, pp. 545-550 [1919].
3. Preglacial Moingona River: *Iowa Acad. Sci., Proc.* 1918, vol. 25, pp. 551-559, 7 figs. [1919].
4. Alpine structures of Jasper Park [northwestern Alberta] (abstract): *Iowa Acad. Sci., Proc.* 1918, vol. 25, pp. 561-568, 2 pls. [1919].
5. Memorial of Garland Carr Broadhead: *Geol. Soc. America, Bull.*, vol. 30, pp. 13-27, port., March 31, 1919.
6. Geotectonic adaption through retardation of the earth's rotation (abstract): *Geol. Soc. America, Bull.*, vol. 30, pp. 87-88, March 31, 1919.
7. Tectonic form of the continents: *Science*, new ser., vol. 49, pp. 612-613, June 27, 1919.
8. Louisian vs. Mississippian as a periodic title (abstract): *Science*, new ser., vol. 50, p. 74, July 18, 1919.
9. Tertiary gravels of northern Utah (abstract): *Science*, new ser., vol. 50, p. 74, July 18, 1919.
10. Orogenics of the Great Basin: *Science*, new ser., vol. 50, p. 413, October 31, 1919.
11. Paleozoic diastrophics of the northern Mexican tableland: *Jour. Geology*, vol. 28, no. 1, pp. 75-83, 3 figs., January-February, 1920.
12. Earth's radius of molar repose (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 111, March 31, 1920.
13. Erosive clews to the high plateaus of Utah (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 151-152, March 31, 1920.
14. Geological setting of New Mexico: *Jour. Geology*, vol. 28, no. 3, pp. 233-254, 6 figs., April-May, 1920.
15. Telluric relations of dislocative fissure veins: *Eng. and Min. Jour.*, vol. 109, pp. 965-966, April 24, 1920.
16. Isostatic measure of the Rocky Mountains: *Geol. Mag.*, vol. 57, pp. 262-266, June, 1920.
17. Span of the great ice age: *Annals of Iowa*, 3d ser., vol. 12, no. 5, pp. 369-373, 1 pl., July, 1920.
18. A century of Iowa geology: *Iowa Acad. Sci., Proc.*, vol. 26, pp. 407-440, 13 pls. (portr.) [1920].
19. Southward extension of the Bozeman Tertiaries into Utah (abstract): *Iowa Acad. Sci., Proc.*, vol. 26, pp. 467-469 [1920].

Keyes, Charles Rollin—Continued.

20. Stratigraphic delimitation of St. Louis formation: *Iowa Acad. Sci., Proc.*, vol. 26, pp. 471–475 [1920].
21. When Hopkins geology was in flower: *Johns Hopkins Alumni Mag.*, vol. 9, no. 3, pp. 204–212, March, 1921.
22. An origin of crystalline schists (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 34, March 31, 1921.
23. Peneplained affinities of high plateaus of Utah (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 56, March 31, 1921.
24. Cracking of mountain massifs (abstract): *Science*, new ser., vol. 54, p. 308, September 30, 1921.
25. Erosion of high plateaus (abstract): *Science*, new ser., vol. 54, p. 308, September 30, 1921.
26. Interglacial volcanic ash (abstract): *Science*, new ser., vol. 54, p. 308, September 30, 1921.
27. (editor). *Pan-American Geologist*, vols. 37–50, 1922–28. Continues volume numbering of the *American Geologist*.
28. Three grand discoveries of life: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 1–14, pls., February, 1922.
29. Blister hypothesis of laccolithic mountains: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 25–34, 4 figs., February, 1922.
30. Emerson geological loving cup: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 41–48, 3 pls. (incl. portr.), February, 1922.
31. Stratigraphy of the Black Hills Tertiaries: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 63–64, 1 fig., February, 1922.
32. Physiographic setting of earliest Tertiary: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 69–70, February, 1922.
33. Basal Tertiary in Rocky Mountain region; Orotaxial relationships of Lance series of Montana; Biotic significance of Cannonball fauna; Ancient salt lake Cannonball: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 70–75, February, 1922.
34. Minimum span of isostatic effect: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 79–81, February, 1922.
35. Changing sphericity of our earth: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 81–84, February, 1922.
36. Discovery of Gilbert's star [origin of Coon Butte, Arizona]: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 86–87, February, 1922.
37. Major telluric stresses initiated by diminishing rate of earth's rotation: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 87–88, February, 1922.
38. Continental dynamics: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 88–90, February, 1922.
39. Geological directrix of isostasy; Geotectonic economy of thrust faulting; Erosional agencies under variant climatic stimuli: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 90–96, February, 1922.
40. Isostatic theory and applied geology: *Pan-Am. Geologist*, vol. 37, no. 2, pp. 97–106, March, 1922.
41. New Mexican laccolithic structures: *Pan-Am. Geologist*, vol. 37, no. 2, pp. 109–120, 5 figs., 1 pl., March, 1922.
42. (and Rowley, R. R.). Serial affinities of Siluric formations in north-eastern Missouri: *Pan-Am. Geologist*, vol. 37, no. 2, pp. 131–138, March, 1922.
43. Geological work of R. Ellsworth Call: *Pan-Am. Geologist*, vol. 37, no. 2, pp. 151–160, portr., March, 1922.

Keyes, Charles Rollin—Continued.

44. Giant bay bar of ancient Bonneville Lake; Thrust at Crow's Nest; Biplanation of earth's straticulate crust: Flexures in Canadian front ranges of Rockies; Some prairie tectonics; Tectonic setting of Utah's high plateaus: *Pan-Am. Geologist*, vol. 37, no. 2, pp. 167-176, 2 figs., 2 pls., March, 1922.
45. Memorial of Orestes Hawley Saint John: *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 31-44, portr., March 31, 1922.
46. Life eras before the Cambrian (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 107-108, March 31, 1922.
47. Tectonic setting of laccolithic genesis: *Pan-Am. Geologist*, vol. 37, no. 3, pp. 203-212, 2 figs., April, 1922.
48. Ore deposition in trunk channels of circulatory ground waters: *Pan-Am. Geologist*, vol. 37, no. 3, pp. 226-230, April, 1922.
49. Passing of Murchison's Siluria; Yorkic period of stratigraphy: *Pan-Am. Geologist*, vol. 37, no. 3, pp. 233-235, 243-244, April, 1922.
50. Complexity of Peter sandstone: *Pan-Am. Geologist*, vol. 37, no. 3, pp. 245-246, April, 1922.
51. Muscogee shales of western interior coal field: *Pan-Am. Geologist*, vol. 37, no. 3, pp. 248-249, April, 1922.
52. Galena limestone as a terranal title: *Pan-Am. Geologist*, vol. 37, no. 3, pp. 252-255, 1 fig., April, 1922.
53. Dakotan sandstone in Missouri: *Pan-Am. Geologist*, vol. 37, no. 3, p. 256, April, 1922.
54. John Casper Branner: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 257-266, portr., May, 1922.
55. Climatic influences in vadose ore deposition: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 275-287, May, 1922.
56. Eral affiliations of Grassy black shale: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 307-310, May, 1922.
57. Judicial attitude in geological criticism: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 311-320, May, 1922.
58. Lowering of life's record into the abyss of time: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 327-328, May, 1922.
59. America's mountain of gold: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 335-337, May, 1922.
60. First mention of the ores [of] zinc in America: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 340-341, May, 1922.
61. New borate field in Nevada: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 343-344, May, 1922.
62. Circulatory cycles of ore-bearing waters: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 347-350, 1 fig., May, 1922.
63. World's oil reserves: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 350-352, May, 1922.
64. Verity of the pipe vein: *Pan-Am. Geologist*, vol. 37, no. 4, p. 352, May, 1922.
65. Summit plane of the Colorado Rockies: *Pan-Am. Geologist*, vol. 37, no. 5, pp. 359-362, 1 fig., June, 1922.
66. Nature of vadose ore deposition: *Pan-Am. Geologist*, vol. 37, no. 5, pp. 379-392, June, 1922.
67. [Formation of boraciferous beds]: *Pan-Am. Geologist*, vol. 37, no. 5, pp. 399-416, June, 1922.

Keyes, Charles Rollin—Continued.

68. Limitation of Cretacic formations in southwestern Iowa: Rio Grande Carbonic province: Pan-Am. Geologist, vol. 37, no. 5, pp. 424-425, 1 fig., 425-426, June, 1922.
69. Vein nature of commercial borates: novel characteristics of the colemanite deposits of California and Nevada: Eng. and Min. Jour.-Press, vol. 113, no. 25, p. 1082, June 24, 1922.
70. Introduction of modern geology into America [geological work of Thomas Nuttall]: Pan-Am. Geologist, vol. 38, no. 1, pp. 1-8, 1 pl. (portr.), August, 1922.
71. Orogenic consequence of a diminishing rate of earth's rotation: Pan-Am. Geologist, vol. 38, no. 1, pp. 51-80, 5 figs., August, 1922.
72. Antiquity of Chupadera Mesa iron deposits: Pan-Am. Geologist, vol. 38, no. 1, pp. 89-92, 1 fig., August, 1922.
73. Antimony deposits in Okanogan Valley, Washington: Pan-Am. Geologist, vol. 38, no. 1, pp. 94-96, 1 fig., 1 pl., August, 1922.
74. Rollin D. Salisbury: Pan-Am. Geologist, vol. 38, no. 2, pp. 97-104, portr., September, 1922.
75. Peneplanal affinities of high plateaux of Utah: Pan-Am. Geologist, vol. 38, no. 2, pp. 119-140, 1 fig., September, 1922.
76. Discovery of Paleozoic formations in New Mexico; Faulting of Bonneville Lake deltas: Pan-Am. Geologist, vol. 38, no. 2, pp. 141-145, September, 1922.
77. Permian rocks of Grand Canyon: Pan-Am. Geologist, vol. 38, no. 2, pp. 147-149, September, 1922.
78. Use of Chester as terranal title: Pan-Am. Geologist, vol. 38, no. 2, pp. 149-150, September, 1922.
79. Absence of Laramian beds in southern Colorado: Pan-Am. Geologist, vol. 38, no. 2, pp. 150-153, September, 1922.
80. Pennsylvanian in time span: Pan-Am. Geologist, vol. 38, no. 2, pp. 153-154, September, 1922.
81. Superior Paleozoics of Rio Grande: Pan-Am. Geologist, vol. 38, no. 2, pp. 154-160, September, 1922.
82. Physiographic paradox of the desert; Measure of eolic depletion of Great Plains; Desert-soil sorting by winds; Elutriation of diamonds by the winds; Significance of girdled mountains; Multiplanary relief of American deserts; Basinal sand drifting on arid piedmonts: Pan-Am. Geologist, vol. 38, no. 2, pp. 161-176, 1 fig., September, 1922.
83. Framework of Arizona geology: Pan-Am. Geologist, vol. 38, no. 3, pp. 231-252, 1 pl., October, 1922.
84. Overthrusts in Great Basin ranges: Pan-Am. Geologist, vol. 38, no. 3, pp. 253-260, October, 1922.
85. Antiquity of *Lingula*: Pan-Am. Geologist, vol. 38, no. 3, pp. 261-262, October, 1922.
86. Late Paleozoic fossils on summit of Ozarks: Pan-Am. Geologist, vol. 38, no. 3, pp. 263-265, October, 1922.
87. Devonian outliers on the Missouri Highlands: Pan-Am. Geologist, vol. 38, no. 3, pp. 271-272, October, 1922.
88. Pioneer geological explorations of Edwin James: Pan-Am. Geologist, vol. 38, no. 4, pp. 273-282, portr., November, 1922.
89. Terranal differentiation of Iowa Cambrian succession: Pan-Am. Geologist, vol. 38, no. 4, pp. 313-326, November, 1922.

Keyes, Charles Rollin—Continued.

90. Delimitations of sundry Arizona terranes: *Pan-Am. Geologist*, vol. 38, no. 4, pp. 335-339, November, 1922.
91. Diastrophic aspect of Aux Vases sandstone: *Pan-Am. Geologist*, vol. 38, no. 4, pp. 339-348, November, 1922.
92. Bridging the ages of ice [glacial deposits at Des Moines, Iowa]: *Pan-Am. Geologist*, vol. 38, no. 5, pp. 349-358, 2 pls., December, 1922.
93. Ceramics of gumbo soils: *Pan-Am. Geologist*, vol. 38, no. 5, pp. 403-408, December, 1922.
94. Grand Canyon's palatial section: *Pan-Am. Geologist*, vol. 38, no. 5, pp. 409-412, December, 1922.
95. Volcanic ash in glacial till; Original of McGee's complex drift sections: *Pan-Am. Geologist*, vol. 38, no. 5, pp. 413-420, 1 pl., December, 1922.
96. Climatic index of Bonneville Lake beds: *Pan-Am. Geologist*, vol. 38, no. 5, pp. 422-424, December, 1922.
97. Geological conquest of the air: *Scientia* (Bologna, Italy), vol. 30, no. 116, pp. 439-446, supplement (French translation) 59-66, December 1, 1921; abstract by author, *Revue de Géologie*, ann. 4, no. 1, pp. 59-60, January, 1923.
98. The mechanics of laccolithic intrusion (presented before the Geological Society of America, St. Louis meeting). 36 pp., 14 figs., Washington, 1922. Abstract by author in *Revue de Géologie*, ann. 4, no. 1, pp. 39-40, January, 1923.
99. Discovery of volcanic ash in Iowa: *Iowa Acad. Sci., Proc.* 1921, vol. 28, pp. 49-53, 3 figs. [1923].
100. Geological age of the terrepleins of Utah's plateaux: *Iowa Acad. Sci., Proc.* 1921, vol. 28, pp. 54-56, 1 fig. [1923].
101. Batholithic veinings of the Sierra de las Cucaras in Baja California (abstract): *Iowa Acad. Sci., Proc.* 1921, vol. 28, pp. 57-58, 1 fig. [1923].
102. Glacial work of James Edward Todd: *Pan-Am. Geologist*, vol. 39, no. 1, pp. 1-14, portr., February, 1923.
103. Contraposed criteria of geological classification: *Pan-Am. Geologist*, vol. 39, no. 1, pp. 51-54, February, 1923.
104. Biotic resolution of Red Wall limestone of Grand Canyon: *Pan-Am. Geologist*, vol. 39, no. 1, pp. 57-61, February, 1923.
105. Belt of maximum epirotic deposition; Eolian sands as interglacial deposits: *Pan-Am. Geologist*, vol. 39, no. 1, pp. 63-65, 65-66, 1 fig., February, 1923.
106. Mid-Ordovician nomenclature in Missouri; Devonian unconformity in Arizona; Reconstruction of Iowa's geology: *Pan-Am. Geologist*, vol. 39, no. 1, pp. 67-70, 70-72, 72, February, 1923.
107. Brass ore in nature; Dialytic rôle of selvages; Rare metals from New Mexico: *Pan-Am. Geologist*, vol. 39, no. 1, pp. 75-76, 77-79, 79-80, February, 1923.
108. Transplantation of English terraneal classification to America by David Dale Owen: *Pan-Am. Geologist*, vol. 39, no. 2, pp. 81-94, 1 pl. (portr.), March, 1923.
109. Taxonomic differentiation of American pre-Cambrian rocks: *Pan-Am. Geologist*, vol. 39, no. 2, pp. 125-140, 2 pls., March, 1923.
110. Creative productivity of our geological surveys: *Pan-Am. Geologist*, vol. 39, no. 2, pp. 141-148, March, 1923.

Keyes, Charles Rollin—Continued.

111. Cosmical derivation of metals; Midget coal field of America [O'Mara district, New Mexico]; Localization of ore values in gouge materials; Tres Amigos gold veins of Arizona: *Pan-Am. Geologist*, vol. 39, no. 2, pp. 152-154, 154-156, 1 fig., 156-159, 159-160, 1 fig., March, 1923.
112. Orogenic exigencies of a rotary earth (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 62, March 30, 1923.
113. Extension of the New York system through the West, by James Hall: *Pan-Am. Geologist*, vol. 39, no. 3, pp. 161-168, 1 pl. (portr.), April, 1923.
114. Metallic content of rocks: *Pan-Am. Geologist*, vol. 39, no. 3, pp. 201-238, April, 1923.
115. Uniformity in geological classifications: *Pan-Am. Geologist*, vol. 39, no. 3, pp. 239-246, April, 1923.
116. Low rim point of Bonneville Lake basin; Withdrawal of marginal drainage in desert development; Climatic changes of later geological times; Lake ancestry in arid lands; *Pan-Am. Geologist*, vol. 39, no. 3, pp. 247-248, 249-251, 1 pl., 251-252, 252-254, 254-256, April, 1923.
117. Microscopical petrography in the interpretation of rock metamorphosis as introduced into America by George Huntington Williams: *Pan-Am. Geologist*, vol. 39, no. 4, pp. 257-272, 1 pl. (portr.), May, 1923.
118. Circumstate correlations of Iowa's geological formations: *Pan-Am. Geologist*, vol. 39, no. 4, pp. 317-326, May, 1923.
119. Current digest of geological literature; Some unusual aspects of Green River coals: *Pan-Am. Geologist*, vol. 39, no. 4, pp. 327-332, May, 1923.
120. Incorporation of meteoritic metals in terrestrial ores; Depths of metallic contact mineralization: *Pan Am. Geologist*, vol. 39, no. 4, pp. 333-336, May, 1923.
121. Gustavus Detlef Hinrichs, mineralogist, meteorologist, and physical chemist: *Pan-Am. Geologist*, vol. 39, no. 5, pp. 337-352, 1 pl. (portr.), June, 1923.
122. Evolution of through-flowing rivers in arid regions: *Pan-Am. Geologist*, vol. 39, no. 5 pp. 379-386, June, 1923.
123. Taxonomy of the Mississippian section; Earliest geographic title for the early Carbonic section of Mississippi Valley; Four-group arrangement of early Carbonic terranes: *Pan-Am. Geologist*, vol. 39, no. 5, pp. 387-390, 390-395, 395-398, June, 1923.
124. Water table of the loess (abstract): *Science*, new ser., vol. 57, p. 148, August 24, 1923.
125. Stratigraphic position of Sweetland black shales (abtsract): *Science*, new ser., vol. 57, p. 148, August 24, 1923.
126. Numerical limitations to glacial epochs (abstract): *Science*, new ser., vol. 57, pp. 147-148, August 24, 1923.
127. Foundation of American stratigraphy by Ebenezer Emmons: *Pan-Am. Geologist*, vol. 40, no. 1, pp. 1-14, 1 pl. (portr.), August, 1923.
128. Geology of Nevada: *Pan-Am. Geologist*, vol. 40, no. 1, pp. 35-64, 4 pls., August, 1923.
129. Taconic question fifty years after: *Pan-Am. Geologist*, vol. 40, no. 1, pp. 65-68, August, 1923.

Keyes, Charles Rollin—Continued.

130. Genetic classification of American early Carbonic terranes; Invalidity of Madison limestone as terranal title; Type localities for sundry Nevada terranes: *Pan-Am. Geologist*, vol. 40, no. 1, pp. 69-75, 1 pl., 75-77, 77-80, August, 1923.
131. Thomas Crowder Chamberlin at fourscore: *Pan-Am. Geologist*, vol. 40, no. 2, pp. 81-94, 2 pls. (portraits), September, 1923.
132. Isostatic aspects of southern Rocky Mountains: *Pan-Am. Geologist*, vol. 40, no. 2, pp. 139-150, 1 pl., September, 1923.
133. Taxonomy of the periods in geology: *Pan-Am. Geologist*, vol. 40, no. 2, pp. 151-156, September, 1923.
134. Primary origin of metallic content of ores: *Pan-Am. Geologist*, vol. 40, no. 2, pp. 157-158, September, 1923.
135. American copper mining in the stone age: *Pan-Am. Geologist*, vol. 40, no. 2, pp. 158-160, September, 1923.
136. Horace Vaughan Winchell, mining geologist: *Pan-Am. Geologist*, vol. 40, no. 3, pp. 161-180, portr., October, 1923.
137. Structure of Dodge gypsum basin [Iowa]: *Pan-Am. Geologist*, vol. 40, no. 3, pp. 215-234, 4 figs., 3 pls., October, 1923.
138. Field geology as a necessary adjunct to rock oil discovery: *Pan-Am. Geologist*, vol. 40, no. 3, pp. 238-240, October, 1923.
139. Raphael Pumpelly, premier explorer: *Pan-Am. Geologist*, vol. 40, no. 4, pp. 241-250, 1 pl. (portr.), November, 1923.
140. Phenomenal deposition of desert gypsum: *Pan-Am. Geologist*, vol. 40, no. 4, pp. 289-298, 1 fig., 3 pls., November, 1923.
141. Geology by proxy [abstracting geologic literature]: *Pan-Am. Geologist*, vol. 40, no. 4, pp. 299-302, November, 1923.
142. Prediction of earthquakes in the premises: *Pan-Am. Geologist*, vol. 40, no. 4, pp. 302-304, November, 1923.
143. Geological pioneering of Jules Marcou: *Pan-Am. Geologist*, vol. 40, no. 5, pp. 321-332, December, 1923.
144. Cubist method of geological correlation: *Pan-Am. Geologist*, vol. 40, no. 5, pp. 357-374, 3 pls., December, 1923.
145. Preparation in geological communication: *Pan-Am. Geologist*, vol. 40, no. 5, pp. 375-379, December, 1923.
146. Black Mesa iron deposits of Plumosa district of Arizona: *Pan-Am. Geologist*, vol. 40, no. 5, pp. 383-384, December, 1923.
147. Laramian hiatus around the southern Rockies: *Iowa Acad. Sci., Proc.* 1922, vol. 29, pp. 101-103 [1924?].
148. Horizontal movement in oblique faulting of inclined strata: *Iowa Acad. Sci., Proc.* 1922, vol. 29, p. 104 [1924?].
149. Taxonomic rank of Pennsylvanian groupings: *Iowa Acad. Sci., Proc.* 1922, vol. 29, pp. 105-106 [1924?].
150. James Edward Todd and Iowa geology: *Iowa Acad. Sci., Proc.*, vol. 30, pp. 35-42, portr. [1924].
151. The crystallographic work of Gustavus Hinrichs: *Am. Mineralogist*, vol. 9, no. 1, pp. 5-8, January, 1924.
152. Grand staircase of Utah: *Pan-Am. Geologist*, vol. 41, no. 1, pp. 33-68, 6 figs., 9 pls., February, 1924.
153. Latter day trend in geologic paleontology; Formative conditions of ore deposition; Porphyry coppers of Palomas Range of western Arizona; Delimitation of sundry rock terranes of Nevada; Zacatecas copper deposits associated with acidic eruptives: *Pan-Am. Geologist*, vol. 41, no. 1, pp. 69-72, 73-75, 76-78, 78-79, 79-80, February, 1924.

Keyes, Charles Rollin—Continued.

154. Last of geological pioneers: Ferdinand Vandiveer Hayden: Pan-Am. Geologist, vol. 41, no. 2, pp. 81-96, portr., March, 1924.
155. Genetic significance of desert range: Pan-Am. Geologist, vol. 41, no. 2, pp. 131-132, March, 1924.
156. Cubist school in terranal classification (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 77-78, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, pp. 141-142, March, 1924.
157. Rarest stone lilies [notice of Frank Springer's Crinoidea Flexibilia and some account of his life]: Annals of Iowa, 3d ser., vol. 14, no. 4, pp. 273-280, 2 pls. (incl. portr.), April, 1924.
158. Anthony Wayne Vogdes: Pan-Am. Geologist, vol. 41, no. 3, pp. 161-168, portr., April, 1924.
159. Denudation of the desert: Pan-Am. Geologist, vol. 41, no. 3, pp. 205-218, April, 1924.
160. Basin range structure in the Great Basin: Pan-Am. Geologist, vol. 41, no. 3, pp. 219-224, April, 1924.
161. Ore deposits of New Mexico: Pan-Am. Geologist, vol. 41, no. 3, pp. 227-233, April, 1924.
162. Razing of ancestral Rockies: Pan-Am. Geologist, vol. 41, no. 4, pp. 277-314, 1 fig., 3 pls., May, 1924.
163. Merging of Devonian and Silurian periods: Pan-Am. Geologist, vol. 41, no. 4, pp. 315-316, May, 1924.
164. Global concurrence on geological periods of time: Pan-Am. Geologist, vol. 4, no. 4, pp. 317-320, May, 1924.
165. Mastery of winds in land sculpture: Pan-Am. Geologist, vol. 41, no. 5, pp. 321-334, 2 pls., June, 1924.
166. Recency of Iowa gypsum deposition: Pan-Am. Geologist, vol. 41, no. 5, pp. 367-380, 1 pl., June, 1924.
167. Simplicity in geological classification: Pan-Am. Geologist, vol. 41, no. 5, pp. 381-384, June, 1924.
168. Recessional streams of arid regions: Pan Am. Geologist, vol. 42, no. 1, pp. 30-36, August, 1924.
169. Toronto meeting of British Association for Advancement of Science: Pan-Am. Geologist, vol. 42, no. 1, pp. 63-66, August, 1924.
170. Soil transport through the air and the deposition of loess: Pan-Am. Geologist, vol. 42, no. 2, 133-148, September, 1924.
171. Solar initiation of glaciation?: Pan-Am. Geologist, vol. 42, no. 2, pp. 149-150, September, 1924.
172. Is geology in the doldrums?: Eng. and Min. Jour.-Press, vol. 118, no. 14, pp. 541-542, October 4, 1924.
173. Exploratory coal stratigraphy of John James Stevenson: Pan-Am. Geologist, vol. 42, no. 3, pp. 161-172, October, 1924.
174. End of deflation: Pan-Am. Geologist, vol. 42, no. 3, pp. 219-228, October, 1924.
175. Genetic basis of geological classification: Pan Am. Geologist, vol. 42, no. 3, pp. 229-232, October, 1924.
176. Saint John and the fishes: Pan-Am. Geologist, vol. 42, no. 3, pp. 233-235, October, 1924.
177. Dumble silver plaque: Pan-Am. Geologist, vol. 42, no. 4, pp. 241-244, 2 pls. (incl. portr.), November, 1924.
178. Working plans in geological field operations: Pan-Am. Geologist, vol. 42, no. 4, pp. 281-296, November, 1924.

Keyes, Charles Rollin—Continued.

179. Trend in university instruction; Geological science in its decadence?: Pan-Am. Geologist, vol. 4, no. 2, pp. 297-301, 301-305, November, 1924.
180. Shifting of the continental masses: Pan-Am. Geologist, vol. 42, no. 4, pp. 305-306, November, 1924.
181. Edmund Otis Hovey: Pan-Am. Geologist, vol. 42, no. 5, pp. 321-330, 2 pls., December, 1924.
182. What is our American Permian?: Pan Am. Geologist, vol. 42, no. 5, pp. 357-370, 2 pls., December, 1924.
183. Physiography of Missouri: Pan-Am. Geologist, vol. 42, no. 5, pp. 371-372, December, 1924.
184. Inapplicability of term Pennsylvanian to Iowa coal measures (abstract): Pan-Am. Geologist, vol. 42, no. 5, p. 379, December, 1924.
185. Easternmost extension of western deserts (abstract): Pan-Am. Geologist, vol. 42, no. 5, p. 380, December, 1924.
186. Recent light on significance of early Devonian hiatus in Iowa (abstract): Pan-Am. Geologist, vol. 42, no. 5, pp. 379-380, December, 1924.
187. The crystule, a unit measure of matter: Am. Mineralogist, vol. 10, no. 1, pp. 15-17, January, 1925. Crystule; the ultimate unit of crystal form: Pan-Am. Geologist, vol. 43, no. 1, pp. 69-71, February, 1925.
188. Iron streak in the loess: Pan-Am. Geologist, vol. 43, no. 1, pp. 71-72, February, 1925.
189. Thomas Leonard Watson: Pan-Am. Geologist, vol. 43, no. 2, pp. 81-84, portr., March, 1925.
190. Shagreened terrene of Wyoming: Pan-Am. Geologist, vol. 43, no. 2, pp. 105-138, 2 figs., 3 pls., March, 1925.
191. Bibliography of isostasy: Pan-Am. Geologist, vol. 43, no. 2, pp. 139-143, March, 1925.
192. Our missing Permian (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 162, March 30, 1925: Pan-Am. Geologist, vol. 43, no. 2, pp. 155-156, March, 1925.
193. Alfred Hulse Brooks, Alaskan pioneer: Pan-Am. Geologist, vol. 43, no. 3, pp. 161-174, portr., 1 pl., April, 1925.
194. Homonymy—identity of geological relations: Pan-Am. Geologist, vol. 43, no. 3, pp. 217-224, April, 1925.
195. Revise Eocene classification of the Cordillera: Pan-Am. Geologist, vol. 43, no. 3, pp. 225-230, April, 1925.
196. Evolutional stages in geologic classification; Devonian crinoids of New York; Iowa and its wealth of crinoids; Note on synonymy of *Onychopus*; Basis of species: Pan-Am. Geologist, vol. 43, no. 3, pp. 231-233, 234-235, 237-238, 239, 239-240, April, 1925.
197. Willet Green Miller, Canadian pre-Cambrianist: Pan-Am. Geologist, vol. 43, no. 4, pp. 241-256, portr., May, 1925.
198. Mid-Cretacic deposition of epicontinental seas: Pan-Am. Geologist, vol. 43, no. 4, pp. 287-302, 3 pls., May, 1925.
199. Proper designation of Iowa coal measures; Basal quartzites of Cordilleran massif; Title of Fernando formation of California; Provincial affinities of Sweetland black shales of Iowa: Pan-Am. Geologist, vol. 43, no. 4, pp. 309-311, 313-315, 315-316, 317-318, 1 pl., May, 1925.

Keyes, Charles Rollin—Continued.

200. Early geological explorations of Joseph Nicholas Nicollet in the Mississippi Valley: *Pan-Am. Geologist*, vol. 43, no. 5, pp. 321–332, portr., June, 1925.
201. John Mason Clarke, paleontologist: *Pan-Am. Geologist*, vol. 44, no. 1, pp. 1–16, portr., August, 1925.
202. Regional plantations about the Mesozoic-Cenozoic boundary: *Pan-Am. Geologist*, vol. 44, no. 1, pp. 43–52, 2 figs., August, 1925.
203. Out on the Cretaceo-Tertic border: *Pan-Am. Geologist*, vol. 44, no. 1, pp. 53–56, August, 1925.
204. Gashed veins on the Queen of Sheba [Arizona]; Vanadinite deposits of the Elephant Butte [New Mexico]: *Pan-Am. Geologist*, vol. 44, no. 1, pp. 60–62, 67–68, August, 1925.
205. William Maclure, father of modern geology: *Pan-Am. Geologist*, vol. 44, no. 2, pp. 81–94, portr., September, 1925.
206. Periodicity of glaciation: *Pan-Am. Geologist*, vol. 44, no. 2, pp. 139–142, 1 fig., September, 1925.
207. Isostasy versus tumefaction: *Pan-Am. Geologist*, vol. 44, no. 2, pp. 143–146, September, 1925.
208. Earliest geographic designation for Iowa chalk; Nicollet's title for Spergen limestone: *Pan-Am. Geologist*, vol. 44, no. 2, pp. 147–149, 149–151, September, 1925.
209. Oldest unmetamorphosed rocks are around Pacific Basin: *Pan-Am. Geologist* vol. 44, no. 3, pp. 207–224, 3 pls., October, 1925.
210. Secular wasting of glacial till sheets; Standardization of American terranal classification; Origin of the continents: *Pan-Am. Geologist*, vol. 44, no. 3, pp. 225–227, 227–232, 232–234, October, 1925.
211. Louis Agassiz and glacial hypothesis: *Pan-Am. Geologist*, vol. 44, no. 4, pp. 241–242, portr., November, 1925.
212. Isostatic quest of the Holy Grail: *Pan-Am. Geologist*, vol. 44, no. 4, pp. 313–316, November, 1925.
213. Norton bronze tablet: *Pan-Am. Geologist*, vol. 44, no. 5, pp. 337–344, 3 pls. (incl. portr.), December, 1925.
214. Astronomical theory of great ice ages; and Newcombian criticism: *Pan-Am. Geologist*, vol. 44, no. 5, pp. 397–406, 1 pl., December, 1925.
215. Early Devonian planation in continental interior (abstract): *Iowa Acad. Sci., Proc.*, vol. 31, pp. 331–332 [1926?].
216. Beginnings of desert in Iowa (abstract): *Iowa Acad. Sci., Proc.*, vol. 31, pp. 332–333 [1926?].
217. Pennsylvanian as a periodic title for Iowa coal measures: *Iowa Acad. Sci., Proc.*, vol. 31, pp. 351–352 [1926?].
218. Rogers of the folded mountains: *Pan-Am. Geologist*, vol. 45, no. 1, pp. 1–14, portr., February, 1926.
219. Glacial control; and recalculated values of earth's orbital excentricity: *Pan-Am. Geologist*, vol. 45, no. 1, pp. 49–74, 1 fig., 3 pls., February, 1926.
220. Controlling cause of periodic glaciation (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 177–178, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 1, pp. 93–94, February, 1926.
221. Present status of astronomical theory of glacial epochs: *Pan-Am. Geologist*, vol. 45, no. 2, pp. 141–148, March, 1926.
222. How shall we classify our glacial till sheets?: *Pan-Am. Geologist*, vol. 45, no. 2, pp. 149–152, March, 1926.

Keyes, Charles Rollin—Continued.

223. New geological map of Kentucky; Expansion of seismological interest; Motion picture in geography and geology: *Pan-Am. Geologist*, vol. 45, no. 2, pp. 152-154, 154-155, 155-156, March, 1926.
224. Estival epoch; the contrasted analogue of an ice age: *Pan-Am. Geologist*, vol. 45, no. 3, pp. 225-236, April, 1926.
225. Westward extension of the Uintah arch; Geological mapping of Arizona: *Pan-Am. Geologist*, vol. 45, no. 3, pp. 243-245, 245-246, April, 1926.
226. Crollian composition of climate and time: *Pan-Am. Geologist*, vol. 45, no. 4, pp. 307-318, May, 1926.
227. Geological message of the jaundiced snow: *Pan-Am. Geologist*, vol. 45, no. 4, pp. 319-320, May, 1926.
228. Geological date of Red Oak faulting; Tectonic significance of transverse horizontal faulting in desert ranges; Tectonic framework of desert ranges: *Pan-Am. Geologist*, vol. 45, no. 4, pp. 321-324, 324-326, 326-328, May, 1926.
229. Forgotten geological map of Minnesota and its belated tectonic significance: *Pan-Am. Geologist*, vol. 45, no. 4, pp. 328-334, 1 fig., 2 pls. (maps), May, 1926.
230. Complications of the glacial cycle: *Pan-Am. Geologist*, vol. 45, no. 5, pp. 337-348, 1 fig., June, 1926.
231. Regional creep of earth's crust and prediction of earthquakes: *Pan-Am. Geologist*, vol. 46, no. 1, pp. 63-66, August, 1926.
232. Mechanism of glacial recessional moraines: *Pan-Am. Geologist*, vol. 46, no. 2, pp. 123-136, 2 figs., 2 pls., September, 1926.
233. Stability in geological nomenclature: *Pan-Am. Geologist*, vol. 46, no. 2, pp. 137-144, September, 1926.
234. Ancient rock column of Montana: *Pan-Am. Geologist*, vol. 46, no. 3, pp. 195-232, 3 figs., 4 pls., October, 1926.
235. Desmesne of economic geology: *Pan-Am. Geologist*, vol. 46, no. 3, pp. 233-238, October, 1926.
236. Astronomical measure of geologic time (abstract): *Pan-Am. Geologist*, vol. 46, no. 3, pp. 250-251, October, 1926.
237. Our first genetic classification of rocks: *Pan-Am. Geologist*, vol. 46, no. 4, pp. 315-316, November, 1926.
238. Why a Glacial prial? [number of glacial stages]: *Pan-Am. Geologist*, vol. 46, no. 5, pp. 393-398, December, 1926.
239. Taxonomy of Iowa's glacial deposits (abstract): *Pan-Am. Geologist*, vol. 46, no. 5, p. 400, December, 1926.
240. Terranal affinities of Iowa chalks (abstract): *Pan-Am. Geologist*, vol. 46, no. 5, pp. 400-401, December, 1926.
241. Water table of the loess (abstract): *Pan-Am. Geologist*, vol. 46, no. 5, p. 401, December, 1926.
242. Translocation of Iowa's Siouan Mountains (abstract): *Iowa Acad. Sci. Proc.*, 1925, vol. 32, p. 361 [1926].
243. New method of precise geological correlation; stratigraphic value of volcanic ash (abstract): *Iowa Acad. Sci. Proc.*, 1925, vol. 32, p. 362 [1926].
244. Water table of the loess (abstract): *Iowa Acad. Sci. Proc.*, 1926, vol. 33, p. 219 [1927].
245. Terranal affinities of Iowa chalks (abstract): *Iowa Acad. Sci. Proc.*, 1926, vol. 33, pp. 219-220 [1927].

Keyes, Charles Rollin—Continued.

246. Taxonomy of Iowa's glacial deposits (abstract): Iowa Acad. Sci., Proc., 1926, vol. 33, p. 220 [1927].
247. Centenary commemoration of William Smith: Pan-Am. Geologist, vol. 47, no. 1, pp. 1-10, portr., February, 1927.
248. Under side of earth's straticulate crust: Pan-Am. Geologist, vol. 47, no. 1, pp. 59-62, February, 1927.
249. Charles Joseph Norwood: Mining and Metallurgy, vol. 8, no. 243, p. 154, March, 1927.
250. James Furman Kemp, economic geologist: Pan-Am. Geologist, vol. 47, no. 2, pp. 81-92, portr., March, 1927.
251. Correlation of original Permian succession: Pan-Am. Geologist, vol. 47, no. 2, pp. 137-142, March, 1927.
252. Stratigraphic affinities of so-called Trenton limestone of Iowa: Pan-Am. Geologist, vol. 47, no. 2, pp. 144-148, 2 figs., March, 1927.
253. [Obituaries], Charles Rochester Eastman: Orestes Hawley St. John; Andrew Gordon Wilson: Annals of Iowa, 3d ser., vol. 15, no. 8, pp. 633-636, April, 1927.
254. Charles Doolittle Walcott: Pan-Am. Geologist, vol. 47, no. 3, pp. 161-170, portr., April, 1927.
255. Taxonomy of geological periods: Pan-Am. Geologist, vol. 47, no. 4, pp. 285-304, inset (table), May, 1927.
256. Stockwellia, a basic unit of geological time: Pan-Am. Geologist, vol. 47, no. 4, pp. 305-310, May, 1927.
257. Taxonomy of our glacial till sheets; Canons of geological nomenclature: Pan-Am. Geologist, vol. 47, no. 5, pp. 351-366, 367-368, June, 1927.
258. What is the original Belt terrane: Pan-Am. Geologist, vol. 47, no. 5, pp. 372-375, June, 1927.
259. Desert ranges of Arizona: Pan-Am. Geologist, vol. 47, no. 5, pp. 376-378, June, 1927.
260. Taconic question restated: Pan-Am. Geologist, vol. 48, no. 1, pp. 55-70, August, 1927.
261. Creative productivity in American geology: Pan-Am. Geologist, vol. 48, no. 1, pp. 71-76, August, 1927.
262. Mississippian series; its synonymy and taxonomy: Pan-Am. Geologist, vol. 48, no. 2, pp. 135-150, 2 pls., September, 1927.
263. Retreat of Des Moines glacial lobe (abstract): Pan-Am. Geologist, vol. 48, no. 2, pp. 155-156, September, 1927.
264. Jurassic events in Iowa (abstract): Pan-Am. Geologist, vol. 48, no. 2, p. 160, September, 1927.
265. Standardization of geological terminology: Pan-Am. Geologist, vol. 48, no. 3, pp. 213-217, October, 1927.
266. Ice flutings on interglacial deposits: Pan-Am. Geologist, vol. 48, no. 3, pp. 217-218, October, 1927.
267. Concentration of rare earth minerals for geologic age determinations: Pan-Am. Geologist, vol. 48, no. 4, pp. 299-306, November, 1927; abstract, no. 2, p. 160, September, 1927.
268. Passing of Murchison's Permian?; Littlest piece of ice: the crystule: Pan-Am. Geologist, vol. 48, no. 4, pp. 307-313, 313-314, November, 1927.
269. Springer of the crinoids: Pan-Am. Geologist, vol. 48, no. 5, pp. 321-334, 2 pls. (incl. portr.), December, 1927.

Keyes, Charles Rollin—Continued.

270. Rules of nominal priority in geology; Tectonic framework of Desert ranges: *Pan-Am. Geologist*, vol. 48, no. 5, pp. 359-363, 363-364, December, 1927.
271. Israel C. White, petroleumist: *Pan-Am. Geologist*, vol. 49, no. 1, pp. 1-10, portr., February, 1928.
272. Moving the mountains: *Pan-Am. Geologist*, vol. 49, no. 1, pp. 53-56, February, 1928.
273. Crinoidal bibliography of Frank Springer: *Pan-Am. Geologist*, vol. 49, no. 1, pp. 60-63, February, 1928.
274. Pioneer geology of George Clinton Swallow: *Pan-Am. Geologist*, vol. 49, no. 2, pp. 81-94, 2 pls. (incl. portr.), March, 1928.
275. Homogeny in American carbonic stratigraphy: *Pan-Am. Geologist*, vol. 49, no. 2, pp. 117-134, 151-152 (abstract), 4 figs., 1 pl., March, 1928; abstract, *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 198, March 30, 1928.
276. Trend in paleontological geology: *Pan-Am. Geologist*, vol. 49, no. 2, pp. 135-138, March, 1928.
277. Geological causes of glacial epochs: *Pan-Am. Geologist*, vol. 49, no. 3, pp. 195-216, 2 figs., 1 pl., April, 1928.
278. How designate pre-Paleozoic time units: *Pan-Am. Geologist*, vol. 49, no. 3, pp. 217-224, April, 1928.
279. Swallowian foundations of Kansas stratigraphy: *Pan-Am. Geologist*, vol. 49, no. 4, pp. 275-290, 1 fig., 2 pls., May, 1928.
280. What is a four stage glacial cycle: *Pan-Am. Geologist*, vol. 49, no. 4, pp. 291-294, 1 fig., May, 1928.
281. Appalachian Paleozoics in world science: *Pan-Am. Geologist*, vol. 49, no. 5, pp. 321-340, 1 pl., June, 1928.
282. Glacial tills and iceberg drifts: *Pan-Am. Geologist*, vol. 49, no. 5, pp. 369-372, June, 1928.
283. Discordance of Missourian series upon Des Moines coal measures (abstract): *Pan-Am. Geologist*, vol. 49, no. 5, pp. 374-375, June, 1928.
284. Triassic age of Iowa's major syncline (abstract): *Pan-Am. Geologist*, vol. 49, no. 5, pp. 375-376, June, 1928.
285. America's great potash reserves: *Pan-Am. Geologist*, vol. 50, no. 1, pp. 39-56, 4 figs., 3 pls., August, 1928.
286. Terranal limitation in geographic designation: *Pan-Am. Geologist*, vol. 50, no. 1, pp. 57-60, August, 1928.
287. Meek's original Plattsmouth terrane; Validity of Marais des Cygnes as terranal title; Lexington formation in Missouri; Synonymy of Broadhead's Atchison shales: *Pan-Am. Geologist*, vol. 50, no. 1, pp. 62-66, 67-69, 70-71, 72-74, August, 1928.
288. Theory of multiple glaciations: *Pan-Am. Geologist*, vol. 50, no. 2, pp. 131-144, September, 1928.
289. Urgent need of international stratigraphical lexicon: *Pan-Am. Geologist*, vol. 50, no. 2, pp. 145-148, September, 1928.
290. Lateral expanse of Rocky Mountain geosyncline; Bolson substructure of trans-Pecos Texas: *Pan-Am. Geologist*, vol. 50, no. 2, pp. 154-158, 158-160, September, 1928.
291. Irreducible residuum of Siluria: *Pan-Am. Geologist*, vol. 50, no. 3, pp. 215-224, October, 1928.
292. College research in geology: *Pan-Am. Geologist*, vol. 50, no. 3, pp. 225-226, October, 1928.

Keyes, Charles Rollin—Continued.

293. Fantasy of buoyant hypothesis: *Pan-Am. Geologist*, vol. 50, no. 4, pp. 307–310, November, 1928.

294. Prodrum of Steno: *Pan-Am. Geologist*, vol. 50, no. 5, pp. 377–380, December, 1928.

Keyes, Mary G. See also Washington, 33, 36, 37.

1. Making thin sections of rocks: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 538–550, 1 fig., December, 1925.

Keyes, Robert L. See Case, J. B., 2; Godde, 2.

Keys, D. A. See Eve, 1.

Keyte, I. A. See also Brainerd, 1, 2.

1. Pennsylvanian crinoids from western Colorado (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 227, March 30, 1925.

2. (and Blanchard, W. Grant, jr., and Baldwin, Harry L., jr.). Gaptank-Wolfcamp problem of the Glass Mountains, Texas: *Jour. Paleontology*, vol. 1, no. 2, pp. 175–178, 1 pl., August, 1927.

Kidder, S. J.

1. Mining methods in Mogollon district, New Mexico: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1314, 21 pp., 8 figs., March, 1924; abstract, *Mining and Metallurgy*, vol. 5, no. 207, pp. 142–143, March, 1924.

Kimball, James Putnam.

1. Relaciones geológicas y génesis de las minas de hierro especular de Santiago de Cuba: *Cuba, Dirección montes y minas, Bol. minas* no. 5, pp. 83–95, 1919.

Kindle, Edward Martin. See also Twenhofel, 16, 18, 22, 29.

1. Obituary, Lawrence M. Lambe, 1863–1919: *Canadian Min. Inst. Monthly Bull.*, no. 85, pp. 544–545, May, 1919. *Canadian Field-Naturalist*, vol. 34, no. 3, pp. 56–57, March, 1920.

2. A neglected factor in the rounding of sand grains: *Am. Jour. Sci.*, 4th ser., vol. 47, pp. 431–434, June, 1919.

3. Inequalities of sedimentation: *Jour. Geology*, vol. 27, no. 5, pp. 339–366, July–August, 1919.

4. The discovery of a Portage fauna in the Mackenzie River valley: *Canada, Geol. Survey, Mus. Bull.*, no. 29, pp. 1–8, 2 pls., October 18, 1919.

5. The climatic interpretation of two early Ordovician mud-crack horizons: *Canadian Field-Naturalist*, vol. 33, no. 5, p. 96, November, 1919.

6. Notes on the iron ores of Mackenzie River valley: *Canada, Geol. Survey, Summ. Rept.*, 1919, pt. C, pp. 1–2, 1920.

7. Memorial of Lawrence M. Lambe: *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 88–97, portr., March 31, 1920.

8. Obituary, Walter R. Billings: *Canadian Field-Naturalist*, vol. 34, no. 3, pp. 57–58, March, 1920. *Geol. Mag.*, vol. 57, pp. 287–288, June, 1920.

9. (and Bosworth, T. O.). Oil-bearing rocks of lower Mackenzie River valley: *Canada, Geol. Survey, Summ. Rept.*, 1920, pt. B, pp. 37–63, 2 figs., 5 pls., 2 maps, 1921. In part, *Canadian Min. Jour.*, vol. 42, no. 32, pp. 635–647, 11 figs., August 12, 1921.

Kindle, Edward Martin—Continued.

10. Distribution of *Stringocephalus burtoni* in Canada [Devonian]: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 15, sec. 4, pp. 21-24, 1921.
11. Shore-line migration and recent coordinate changes in bottom topography at Point Pelee, Lake Erie (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 57, March 31, 1921.
12. Suggestions to oil prospectors in the Mackenzie River Valley: Canadian Min. Jour., vol. 42, no. 18, pp. 356-361, 10 figs., May, 6, 1921.
13. An example of gravity deformation in a limestone slab: Canadian Field-Naturalist, vol. 35, no. 6, pp. 115-116, 1 fig., September, 1921.
14. A tree three million years old [Red Deer Valley, Alberta]: Illustrated Canadian Forestry Mag., vol. 17, no. 7, pp. 381-382, 408-409, 2 figs., September, 1921.
15. The Mackenzie River oil region: Canadian Inst. Min. and Met., Monthly Bull. no. 108, pp. 306-311, April, 1921; Trans., vol. 24, pp. 75-80 [1922].
16. Lilley and Devonian fishes: Pan-Am. Geologist, vol. 37, no. 4, pp. 330-331, May, 1922.
17. Notes on post-glacial terraces on the eastern and western shores of the Gulf of St. Lawrence: Canadian Field-Naturalist, vol. 36, no. 6, pp. 111-113, September, 1922.
18. Canadian streams with some unusual features: Canadian Field-Naturalist, vol. 37, no. 2, pp. 21-22, February, 1923.
19. Unusual type of sand bar: Pan-Am. Geologist, vol. 39, no. 1, pp. 15-16, 1 pl., February, 1923.
20. Notes on mud crack and ripple mark in recent calcareous sediments: Jour. Geology, vol. 31, no. 2, pp. 138-145, 4 figs., 1923.
21. A note on mud crack and associated joint structure: Am. Jour. Sci., 5th ser., vol. 5, pp. 329-330, 1 fig., April, 1923.
22. The physical and biological characteristics of certain types of marlite balls from Manitoba and Michigan: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 17, sec. 4, pp. 105-114, 3 pls., May, 1923.
23. Nomenclature and genetic relations of certain calcareous rocks: Pan-Am. Geologist, vol. 39, no. 5, pp. 365-372, 5 pls., June, 1923.
24. Range and distribution of certain types of Canadian Pleistocene concretions (with discussion by T. T. Quirke): Geol. Soc. America, Bull., vol. 34, no. 3, pp. 609-648, 4 figs., 8 pls., September 30, 1923; abstract, no. 1, pp. 64-65, March 30, 1923.
25. Geography and geology of Lake Melville district, Labrador Peninsula: Canada, Geol. Survey, Mem. 141, 105 pp., 10 figs., 17 pls., 1924.
26. Geology of a portion of the northern part of Moose River basin, Ontario: Canada, Geol. Survey, Summ. Rept. 1923, pt. C 1, pp. 21-41, 3 pls., 1924.
27. Observations on ice-borne sediments by the Canadian and other Arctic expeditions: Am. Jour. Sci., 5th ser., vol. 7, pp. 251-286, 2 figs., April, 1924.
28. (and Edwards, E. M.). Literature of ripple mark: Pan-Am. Geologist, vol. 41, no. 3, pp. 191-203, April, 1924.
29. Note on a mammoth tusk from the Arctic Archipelago: Am. Jour. Sci., 5th ser., vol. 8, pp. 183-185, 3 figs., August, 1924.
30. Standard Paleozoic section of Rocky Mountains near Banff, Alberta: Pan-Am. Geologist, vol. 42, no. 2, pp. 113-124, 2 pls., September, 1924.

Kindle, Edward Martin—Continued.

31. The terraces of the Lake Melville district, Labrador: *Geog. Rev.*, vol. 14, no. 4, pp. 597-602, 3 figs., October, 1924.
32. Three new Devonian fossils from Alberta: *Pan-Am. Geologist*, vol. 42, no. 3, pp. 217-218, 1 pl., October, 1924.
33. Edward J. Whittaker [obituary notice]: *Canadian Inst. Min. and Met., Monthly Bull.* no. 151, pp. 256-258, portr., November, 1924.
34. Certain types of sedimentation now in progress on or near the Atlantic coast of North America (abstract): *Pan-Am. Geologist*, vol. 42, no. 4, p. 311, November, 1924; *British Assoc. Adv. Sci., Rept. 92d Meeting*, p. 391, 1925.
35. The bottom deposits of Lake Ontario: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 19, sec. 4, pp. 47-102, 1 fig., 3 pls., 3 maps, 1925.
36. A note on rhizocretions: *Jour. Geology*, vol. 33, no. 7, pp. 744-746, 1 fig., October-November, 1925.
37. Contrasted types of mud cracks: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 20, sec. 4, pp. 71-75, 5 pls., 1926.
38. The occurrence of the genus *Leptodus* in the anthracolithic fauna of British Columbia: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 20, sec. 4, pp. 109-111, 1 fig., 1926.
39. A comparison of recent and late Champlain stages of McKay Lake as diatom habitats: *Canadian Field-Naturalist*, vol. 40, no. 4, pp. 83-84, April, 1926.
40. Some fossils in the Dominion National Museum: *Canadian Min. Jour.*, vol. 47, no. 18, pp. 465-466, 3 figs., April 30, 1926.
41. The story of the stones in the Dominion Parliament Building: *Canadian Min. Jour.*, vol. 47, no. 28, pp. 689-691, 3 figs., July 9, 1926; *Sci. Monthly*, vol. 23, no. 6, pp. 539-544, 4 figs., December, 1926.
42. Notes on the tidal phenomena of Bay of Fundy rivers: *Jour. Geology*, vol. 34, no. 7, pp. 642-652, 3 figs., October-November, 1926.
43. The romance of fossil hunting; a review: *Canadian Min. Jour.*, vol. 48, p. 9, January 7, 1927.
44. Scale of hardness and cohesion for sedimentary rocks: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 2, p. 199, February, 1927.
45. The rôle of thermal stratification in lacustrine sedimentation: *Roy. Soc. Canada, Trans.*, 3d ser., vol. 21, sec. 4, pp. 1-35, 5 figs., 3 pls., March, 1927; abstract, *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 150, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 2, p. 153, March, 1927.
46. Conodont fauna from the lower Mackenzie River valley (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 234, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 3, p. 236, April, 1927.
47. The occurrence and correlation of a Devonian fauna from Peace River, Alberta: *Canada, Geol. Survey, Bull.* no. 49, pp. 14-18, 3 pls., 1928.
48. A crustacean new to the Pleistocene fauna of Canada: *Canadian Field-Naturalist*, vol. 42, no. 9, pp. 211-212, 1 fig., December, 1928.

King, Philip B.

1. Physiography of southwestern South Dakota (abstract): *Pan-Am. Geologist*, vol. 42, no. 5, pp. 378-379, December, 1924.
2. The geologic structure of a portion of the Glass Mountains of west Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 9, pp. 877-884, 2 figs., 1 pl. (map), September, 1926.

King, Philip B.—Continued.

3. Notes on the physiography of southwestern North Dakota (abstract): Iowa Acad. Sci., Proc., vol. 31, p. 333 [1926?].
4. The Bissett formation, a new stratigraphic unit in the Permian of west Texas: Am. Jour. Sci., 5th ser., vol. 14, pp. 212-221, 3 figs. (incl. map), September, 1927.
5. Corrosion and corrasion on Barton Creek, Austin, Texas: Jour. Geology, vol. 35, no. 7, pp. 631-638, 7 figs., October-November, 1927.
6. (and King, Robert E.). The Pennsylvanian and Permian stratigraphy of the Glass Mountains: Texas, Univ., Bull. no. 2801, pp. 109-145, 2 figs., 3 pls. (map and sections), 1928.

King, Robert E. See King, Philip B., 6.

Kirby, Grady. See Dawson, 1.

Kirk, Charles Townsend.

1. Notes on Sequoyah County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 4, p. 503, July-August, 1921.
2. (and Weirich, T. E.). Steep subsurface folds versus faults: Geol. Soc. America, Bull., vol. 38, no. 4, pp. 577-589, 7 figs., December 30, 1927; abstract, no. 1, p. 152, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, pp. 153-154, March, 1927.

Kirk, Edwin. See also Slocum, 1; Wilson, A. E., 4.

1. Paleozoic glaciation in southeastern Alaska (abstract): Washington Acad. Sci., Jour., vol. 9, no. 4, pp. 107-108, February 19, 1919.
2. *Brooksina*, a new pentameroid genus from the Upper Silurian of southeastern Alaska: U. S. Nat. Mus., Proc., vol. 60, art. 19, 8 pp., 1 pl., 1922.
3. *Harpidium*, a new pentameroid brachiopod genus from southeastern Alaska: U. S. Nat. Mus., Proc., vol. 66, art. 32, 7 pp., 2 pls., April 11, 1925.
4. Notes on an early collection of Paleozoic fossils from Ellesmereland: Am. Jour. Sci., 5th ser., vol. 10, pp. 445-447, November, 1925.
5. *Cymbidium*, a new genus of Silurian pentameroid brachiopods from Alaska: U. S. Nat. Mus., Proc., vol. 69, art. 23, 5 pp., 1 pl., 1926.
6. *Pynodesma*, a new molluscan genus from the Silurian of Alaska: U. S. Nat. Mus., Proc., vol. 71, art. 20, 9 pp., 2 pls., 1927.
7. New American occurrence of *Stringocephalus*: Am. Jour. Sci., 5th ser., vol. 13, pp. 219-222, March, 1927.
8. *Macluritella*, a new gastropod genus from the lower Ordovician of Colorado: Am. Jour. Sci., 5th ser., vol. 14, pp. 288-292, 1 pl., October, 1927.
9. *Pycinodesma*, new name for *Pynodesma* Kirk not Schrammen: Washington Acad. Sci., Jour., vol. 17, no. 21, p. 543, December 19, 1927.
10. Fossil marine faunas as indicators of climatic conditions: Smithsonian Inst., Ann. Rept., 1927, pp. 299-307, 1928.
11. *Bathmopterus*, a new fossil gastropod genus from the Silurian of Alaska: U. S. Nat. Mus., Proc., vol. 74, art. 18, 4 pp., 1 pl., 1928.

Kirk, Stuart Raeburn.

1. Ostracoda from the Trenton limestone of Nashville, Tennessee: Am. Jour. Sci., 5th ser., vol. 16, pp. 410-422, 1 fig., November, 1928.

Kirkbride, W. H.

1. The earthquake at Santa Barbara, California, June 29, 1925, as it affected the railroad of the Southern Pacific Company: *Seismological Soc. America, Bull.*, vol. 17, no. 1, pp. 1-7, 7 pls., March, 1927.

Kirkham, Virgil Raymond Drexel. See also Laney, 1; Piper, 5.

1. Petroleum possibilities of certain anticlines in southeastern Idaho: Idaho, Bur. Mines and Geology, Bull. no. 4, 36 pp., 9 pls. (maps), 1922.
2. Notes on the geology of eastern Bear Lake County, Idaho, with reference to oil possibilities: Idaho, Bur. Mines and Geology, Pamphlet no. 7, 6 pp., November, 1923. [Mimeographed.]
3. Geology and oil possibilities of Bingham, Bonneville, and Caribou counties, Idaho: Idaho, Bur. Mines and Geology, Bull. no. 8, 116 pp., 8 pls. (maps), September, 1924.
4. Phosphate deposits of Idaho and their relation to the world supply: *Am. Inst. Min. and Met. Eng., Trans.* [preprint], no. 1405, 28 pp., 16 figs., January, 1925; (with discussion), *Trans.*, vol. 71, pp. 308-338, 16 figs., 1925; abstract, *Mining and Metallurgy*, vol. 6, no. 221, pp. 247-248, May, 1925.
5. Oil possibilities of southeastern Idaho: *Mining and Metallurgy*, vol. 6, no. 218, pp. 71-74, 5 figs., February, 1925.
6. Some adverse influences of glaciation on mining: *Eng. and Min. Jour.-Press*, vol. 121, no. 26, pp. 1046-1049, 9 figs., June 26, 1926.
7. (and Ellis, Ernest W.). Geology and ore deposits of Boundary County, Idaho: Idaho Bur. Mines and Geology, Bull. no. 10, 78 pp., 13 pls. (incl. maps), November, 1926.
8. Ground water for municipal supply at St. Maries, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 17, 11 pp., 1 pl. (map), November, 1926. [Mimeographed.]
9. A geologic reconnaissance of Clark and Jefferson and parts of Butte, Custer, Fremont, Lemhi, and Madison counties, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 19, 47 pp., 4 pls. (incl. map), January, 1927. [Mimeographed.]
10. Ground water for municipal supply at Potlatch, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 23, 12 pp., 2 pls. (incl. map), June, 1927. [Mimeographed text.]
11. Underground water resources in the vicinity of Orofino, Idaho, and Lapwai, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 24, 17 pp., 3 pls. (incl. maps), July, 1927. [Mimeographed.]
12. Brief papers on geologic field work in Idaho during 1927: Idaho, Bur. Mines and Geology, Pam. no. 29, 15 pp., June, 1928. [Mimeographed.]

Kirkpatrick, Paul.

1. Seismic measurements by the overthrow of columns: *Seismological Soc. America, Bull.*, vol. 17, no. 2, pp. 95-109, 7 figs., June, 1927.
2. Simple apparatus for seismic measurements: *Nat. Research Council, Bul.* no. 61, pp. 91-96, 2 figs., July, 1927.

Kirkpatrick, R. Z.

1. Earthquakes in Panama up to January 1, 1920: *Seismol. Soc. America, Bull.*, vol. 10, no. 3, pp. 121-128, September, 1920.

Kitchin, Finlay Lorimer.

1. The so-called Malone Jurassic formation in Texas: *Geol. Mag.*, vol. 63, pp. 454-469, October, 1926.

Kite, W. C. See also Aurin, 2.

1. Geology of Kingfisher and Canadian counties: Oklahoma Geol. Survey, Bull. no. 40-O, 13 pp., 2 figs. and 1 pl. (incl. maps); July, 1927.

Kithil, Karl L.

1. Prospecting by the earth-wave travel method: Eng. and Min. Jour., vol. 122, no. 24, pp. 931-936, 7 figs., December 11, 1926.

Kitson, Howard W. See also Cunningham, 2.

1. Experiments in shear-zone folding (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 268-269, March 30, 1928.
2. Origin of the folds of Osage County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 10, pp. 1026-1028, October, 1928.

Kitto, Franklin Hugo.

1. New oil fields of northern Canada: Canada, Dept. of the Interior, Natural Resources Intelligence Branch, 8 pp., map, 1921.

Klem, Mary J.

1. Hambach of the blastoids: Pan-Am. Geologist, vol. 40, no. 1, pp. 32-34, August, 1923.

Klotz, Otto Julius.

1. The present status of the seismological work in the Pacific: Seismol. Soc. America, Bull., vol. 10, no. 4, pp. 300-309, December, 1920.
2. Analysis of earthquake waves: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 14, sec. 3, pp. 47-53, 1921.
3. Status of the seismological work in the Pacific: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, pp. 397-408, 1921.

Knapp, Arthur.

1. Rock classification from the oil driller's standpoint: Am. Inst. Min. and Met. Eng., Trans., vol. 65, pp. 424-429, 1921; Eng. and Min. Jour., vol. 109, pp. 514-516, February, 1920; Boletín del Petróleo, vol. 9, no. 6, pp. 519-533, June, 1920.
2. Technical papers and their presentation: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 1, pp. 77-83, January, 1928.

Knapp, George N.

1. The foundry sands of Minnesota: Minnesota Geol. Survey, Bull. no. 18, 105 pp., 13 figs., 1923.

Knappen, Russell Stafford. See also Gould, C. N., 3.

1. Geology and mineral resources of the Dixon quadrangle: Illinois State Geol. Survey, Bull. no. 49, 141 pp., 20 figs., 5 pls. (incl. maps), 1926.
2. James Furman Kemp: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 2, pp. 221-222, February, 1927.

Knickerbocker, A. K. See Fettke, 6.

Knight, Cyril Workman. See also Burrows, 1; Miller, W. G., 2, 3.

1. (and Burrows, A. G., Hopkins, P. E., and Parsons, A. L.). Abitibi-Night Hawk gold area, District of Timiskaming: Ontario Bur. Mines, 28th Ann. Rept., vol. 28, pt. 2, pp. 1-70, 50 figs., map, 1919.
2. Occurrence of elaterite, or elastic bitumen, in a fluorite vein at Madoc, Ontario: Canadian Min. Jour. vol. 40, pp. 399-400, June 4, 1919.
3. A new discovery of pitchblende [Butt township, Ontario]: Canadian Min. Jour., vol. 40, p. 772, October 14, 1919.

Knight, Cyril Workman—Continued.

4. Windy Lake and other nickel areas [Ontario]: Ontario Dept. Mines, 29th Ann. Rept., vol. 29, pt. 1, pp. 193-224, 14 figs., map, 1920.
5. Ben Nevis gold area: Ontario Dept. Mines, 29th Ann. Rept., vol. 29, pt. 3, pp. 1-27, 13 figs., map, 1920.
6. Argonaut gold mine: Ontario Dept. Mines, 29th Ann. Rept., vol. 29, pt. 3, pp. 65-76, 5 figs., map, 1920.
7. Cobalt [Ontario]—its past and future: Eng. and Min. Jour.-Press, vol. 113, no. 18, pp. 761-768, 4 figs., May 6, 1922.
8. The geology of Ontario's iron ores: Canadian Min. Jour., vol. 43, no. 37, p. 625, September 15, 1922. Iron and Steel of Canada, vol. 5, no. 9, pp. 158-159, September, 1922.
9. Lightning River gold area [Ontario]: Canadian Min. Jour., vol. 43, no. 41, pp. 695-699, October 13, 1922.
10. The chemical composition of the norite micropegmatite, Sudbury, Ontario, Canada: Econ. Geology, vol. 18, no. 6, pp. 592-594, September, 1923.
11. Geology of the mine workings of Cobalt and South Lorrain silver areas: Ontario Dept. Mines, 31st Ann. Rept., vol. 31, pt. 2, pp. x-xiv, 1-238, 321-358, 56 figs., and maps, plans, and sections, 1924. [Pp. 189-237 also issued as Bull. no. 48, 1923.]
12. Lightning River gold area: Ontario Dept. Mines, 33d Ann. Rept., vol. 33, pt. 3, pp. 41-49, 1 pl., 1925.
13. Reminiscences of Willet G. Miller: Canadian Inst. Min. and Met., Bull. no. 157, pp. 534-559, 11 pls. (portr.), May, 1925; Trans., vol. 28, pp. 19-44, 11 pls. (portr.) [1926].

Knight, J. Brookes.

1. Some Pennsylvanian ostracods from the Henrietta formation of eastern Missouri: Jour. Paleontology, vol. 2, no. 3, pp. 229-267, 5 pls., September, 1928.
2. Some Pennsylvanian ostracods from the Henrietta formation of eastern Missouri: Jour. Paleontology, vol. 2, no. 4, pp. 318-337, 2 pls., December, 1928.

Knight, Nicholas. See also Hendricks 1; Reed, 1.

1. A chemical study of dolomites: Iowa Acad. Sci., Proc. 1921, vol. 28, pp. 37-45 [1923].
2. Iowa glass sand (abstract): Pan-Am. Geologist, vol. 46, no. 5, pp. 402-403, December, 1926.
3. Iowa glass sands: Pan-Am. Geologist, vol. 47, no. 4, pp. 279-280, May, 1927.

Knight, Samuel Howell. See also Kemp, 21.

1. Eolian abrasion of quartz grains (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 107-108, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 153, March, 1924.
2. A short study in geology: Midwest Review, vol. 9, no. 1, pp. 3-4, 29, January, 1928.

Kniker, Hedwig Thusnelda. See also Applin, E. R., 1; Beede, 9.

1. Comanchean and Cretaceous Pectinidae of Texas: Texas, Univ., Bull., no. 1817, 56 pp., 10 pls., March 20, 1918.

Knopf, Adolph.

1. Tin in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 23-31, September 9, 1919.
2. Present tendencies in geology; metalliferous deposits: Econ. Geology, vol. 14, no. 7, pp. 543-554, November, 1919. Abstract, Washington Acad. Sci., Jour., vol. 9, no. 15, p. 543, September 19, 1919.
3. The Divide silver district, Nevada: U. S. Geol. Survey, Bull. 715, pp. 147-170, 1 fig., 1 pl. (map), February 12, 1921. Abstract, Washington Acad. Sci., Jour., vol. 11, no. 18 pp. 441-442, November 4, 1921.
4. Ore deposits of Cedar Mountain, Mineral County, Nevada: U. S. Geol. Survey, Bull. 725, pp. 361-382, 5 figs., November 19, 1921.
5. The Candelaria silver district Nevada: U. S. Geol. Survey, Bull. 735, pp. 1-22, 2 figs., January 20, 1922.
6. (and Johnson, B. L.). Tin in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 1, pp. 747-750, January 26, 1922.
7. Geology and ore deposits of the Rochester district, Nevada: U. S. Geol. Survey, Bull. 762, 78 pp., 5 figs., 4 pls. (incl. map), 1924.
8. Bibliography of isostasy. 39 pp., issued in mimeographed form by the Division of Geology and Geography, National Research Council, Washington, D. C., 1924.
9. Discovery of andalusite in California: Eng. and Min. Jour.-Press, vol. 120, no. 20, p. 778, November 14, 1925.
10. Recent developments in the Aspen district, Colorado: U. S. Geol. Survey, Bull. 785, pp. 1-28, 6 figs., 1 pl. (map), March 30, 1926.

Knopf, Eleanora Bliss. See also Jonas, 1, 6.

1. Some problems of international readjustment of mineral supplies as indicated in recent foreign literature: Econ. Geology, vol. 14, no. 2, pp. 147-171, 5 figs., March-April, 1919. Abstract, with discussion by E. S. Bastin, Geol. Soc. America, Bull., vol. 30, pp. 101-102, March 31, 1919.
2. Chrome ores of southeastern Pennsylvania and Maryland: U. S. Geol. Survey, Bull. 725, pp. 85-99, 1 fig., August 4, 1921. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 11, no. 20, p. 494, December 4, 1921.
3. (and Jonas, Anna I.). Stratigraphy of the crystalline schists of Pennsylvania and Maryland: Am. Jour. Sci., 5th ser., vol. 5, pp. 40-62, 3 figs., January, 1923; abstract, with discussion by Florence Bascom and G. H. Ashley: Geol. Soc. Am., Bull., vol. 33, no. 1, pp. 110-111, March 31, 1922.
4. Relation of former drainage channels to the topography of eastern Pennsylvania and Maryland (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 77, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 141, March, 1924.
5. Correlation of residual erosion surfaces in the eastern Appalachian highlands: Geol. Soc. America, Bull., vol. 35, no. 3, pp. 633-668, 15 figs., September 30, 1924.
6. Some results of recent work in the southern Taconic area: Am. Jour. Sci., 5th ser., vol. 14, pp. 429-458, 7 figs., December, 1927.

Knowlton, Frank Hall, 1860-1926. See also Manson, 2.

1. Relations between the Mesozoic floras of North and South America: Geol. Soc. America, Bull., vol. 29, no. 4, pp. 607-614, December 30, 1918.
2. A catalogue of the Mesozoic and Cenozoic plants of North America: U. S. Geol. Survey, Bull. 696, 815 pp., 1919.

Knowlton, Frank Hall—Continued.

3. Evolution of geologic climates: Geol. Soc. America, Bull., vol. 30, no. 4, pp. 499-566, December 30, 1919; abstract, with title, Climates of the past, vol. 30, no. 1, p. 151, March 31, 1919.
4. A dicotyledonous flora in the type section of the Morrison formation: Am. Jour. Sci., 4th ser., vol. 49, pp. 189-194, March, 1920.
5. Are the Lance and Fort Union formations of Mesozoic time?: Science, new ser., vol. 53, pp. 307-308, April 1, 1921.
6. Criteria for determination of climate by means of fossil plants: Geol. Soc. America, Bull., vol. 32, no. 3, pp. 353-358, September 1, 1921.
7. Further remarks on the evolution of geologic climates: Am. Jour. Sci., 5th ser., vol. 2, pp. 187-196, October, 1921.
8. The Laramie flora of the Denver Basin; with a review of the Laramie problem: U. S. Geol. Survey, Prof. Paper 130, 175 pp., 1 fig., 38 pls., 1922.
9. Floral continuity in Lance and Union sections: Pan-Am. Geologist, vol. 37, no. 1, pp. 67-68, February, 1922.
10. A fossil dogwood flower [*Cornus speciosissima*, Converse County, Wyoming]: Am. Jour. Sci., 5th ser., vol. 4, pp. 136-138, 2 figs., August, 1922.
11. Revision of the flora of the Green River formation with descriptions of new species: U. S. Geol. Survey, Prof. Paper 131, pp. 133-182, 5 pls., March 30, 1923.
12. Fossil plants from the Tertiary lake beds of south-central Colorado: U. S. Geol. Survey, Prof. Paper 131, pp. 183-197, 4 pls., March 31, 1923.
13. Flora of the Animas formation: U. S. Geol. Survey, Prof. Paper 134, pp. 71-98, 13 pls., 1924.
14. The possible origin of the angiosperms: Science, new ser., vol. 61, pp. 568-570, May 29, 1925.
15. Evidence of fossil plants to climatic zoning in Mesozoic times (abstract): Pan-Am. Geologist, vol. 44, no. 1, pp. 69-70, August, 1925.
16. Flora of the Latah formation of Spokane, Washington, and Coeur d'Alene, Idaho: U. S. Geol. Survey, Prof. Paper 140, pp. 17-81, 24 pls., February 19, 1926.
17. Plants of the past; a popular account of fossil plants. xix, 275 pp., 90 figs., Princeton, Princeton University Press, 1927.
18. The fossil forests of the Yellowstone National Park: U. S., Nat. Park Service, 29 pp., 15 figs., 1928.

Knox, Henry H. See also Feilding, 1.

1. An effect of climatic change on the superficial alteration of ore deposits: Econ. Geology, vol. 17, no. 8, pp. 654-661, December, 1922.

Knox, John Knox.

1. Geology of the serpentine belt, Coleraine sheet, Thetford-Blake Lake mining district, Quebec. 67 pp., 3 pls., map, Thesis, University of Chicago, 1918.
2. Geology of New Mexico as an index to probable oil resources: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 1, pp. 95-112, 1920.
3. Probable oil resources of New Mexico: Eng. and Min. Jour., vol. 110, no. 2, pp. 69-74, July 10, 1920.

Koch, Lauge.

1. Stratigraphy of northwest Greenland: Dansk geol. Foren., Meddel., Bd. 5, no. 17, 78 pp., 12 figs., 1 pl., map, 1920.

Koch, Lauge—Continued.

2. Some new features in the physiography and geology of Greenland: *Jour. Geology*, vol. 31, no. 1, pp. 42-65, 8 figs., January-February, 1923.
3. Preliminary report upon the geology of Peary Land, Arctic Greenland: *Am. Jour. Sci.*, 5th ser., vol. 5, pp. 189-199, 2 figs. (maps), March, 1923.
4. The geology of north Greenland: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 271-286, 5 figs., April, 1925.
5. Ice cap and sea ice in north Greenland: *Geog. Rev.*, vol. 16, no. 1, pp. 98-107, 2 figs., January, 1926.
6. A new fault zone in northwest Greenland: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 301-310, 2 figs., October, 1926.
7. Two recent journeys on the coast of eastern Greenland, with appendix, Note on the geology of eastern Greenland: *Geog. Jour.*, vol. 71, no. 1, pp. 1-15, 8 pls., January, 1928.
8. Preliminary statement of the stratigraphy of east Greenland: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 346-349, April, 1928.
9. Contributions to the glaciology of north Greenland: *Meddel. om Groenland*, Bd. 65, pp. 181-464, 140 figs., 6 pls., 1928.

Kock, W. See also Zuschlag, 1.

Koenigsberger, J. G.

1. Field observations of electrical resistivity and their practical application: *Am. Inst. Min. and Met. Eng.*, Tech. Pub. no. 129, 17 pp., 5 figs., November, 1928.

Koschmann, A. H.

1. Oil and gas in Oklahoma: geology of Payne County: *Oklahoma Geol. Survey*, Bull. no. 40-X, 13 pp., 4 figs., 1 pl., January, 1928.

Kotick, A. F.

1. The Rincon oil field [California]: *Oil Bull.*, vol. 14, no. 10, pp. 1033-1037, 7 figs., October, 1928.

Kovarik, A. F.

1. (and McKeehan, L. W.). Radioactivity [VII, Radioactivity in geology and cosmology, pp. 135-152]: *Nat. Research Council*, Bull., vol. 10, pt. 1, no. 51, 203 pp., 1925.

Krampert, E. W.

1. The oil fields of the Rawlins-Lost Soldier district, Wyoming: *Am. Assoc. Petroleum Geologists*, Bull., vol. 7, no. 2, pp. 131-146, 4 figs., March-April, 1923.
2. Reported oil strikes in Hanna Basin and Red Desert, Wyoming: *Am. Assoc. Petroleum Geologists*, Bull., vol. 7, no. 5, pp. 575-576, September-October, 1923.

Kratzert, J. See also Wittich, 14, 15, 20, 22, 26.

1. Einige neue Mineralvorkommen im Granit von Guadalcázar, Mexiko: *Centralbl. Mineralogie*, no. 18, pp. 561-564, September 15, 1922. Algunos nuevos hallazgos de minerales en el granito de Guadalcázar, S. L. P.: *Soc. cient. "Ant. Alz."* Mem. y Rev., t. 46, nos. 1-2, pp. 89-94, February, 1926.

Kraus, Edward Henry.

1. The new mineralogical laboratory at the University of Michigan: *Am. Mineralogist*, vol. 4, no. 5, pp. 45-56, 4 figs., 2 pls., May, 1919.

Kraus, Edward Henry—Continued.

2. (and Hunt, Walter Fred). *Mineralogy; an introduction to the study of minerals and crystals.* xiv, 561 pp., 696 figs., New York, McGraw-Hill Book Company, 1920.
3. The future of mineralogy in America: *Am. Mineralogist*, vol. 6, no. 2, pp. 23-34, February, 1921. *Science*, new ser., vol. 53, pp. 219-226, March 11, 1921.
4. Some unusual specimens of "float" copper [from Michigan]: *Am. Mineralogist*, vol. 9, no. 2, pp. 23-26, 6 figs., February, 1924.
5. (and Holden, Edward Fuller). *Gems and gem materials.* vii, 222 pp., 256 figs., New York, McGraw-Hill Book Company, 1925.
6. Edward Fuller Holden: *Science*, new ser., vol. 63, pp. 84-85, January 22, 1926.
7. Memorial of Edward Fuller Holden: *Am. Mineralogist*, vol. 11, no. 3, pp. 57-59, portr., March, 1926.
8. (and Hunt, Walter Fred). *Mineralogy; an introduction to the study of minerals and crystals.* 2d ed., 604 pp., 766 figs., New York, McGraw-Hill Book Company, 1928.

Krejci, Milo W.

1. Ancient man in Nevada: *Eng. and Min. Jour.*, vol. 122, no. 3, p. 103. July 17, 1926.

Krey, Frank.

1. Geology, distribution, and occurrence of the potash-bearing shale of Union County: *Illinois, Univ., Agr. Exper. Sta., Bull.* no. 232, pp. 237-243, 1 fig., March, 1921.
2. Structural reconnaissance of the Mississippi Valley area from Old Monroe, Missouri, to Nauvoo, Illinois: *Illinois State Geol. Survey, Bull.* no. 45, 86 pp., 18 pls. (incl. map), 1924; *Missouri Bur. Geology and Mines*, 2d ser., vol. 18, 86 pp., 18 pls. (incl. map), 1924.
3. (and Lamar, J. E.). Limestone resources of Illinois: *Illinois State Geol. Survey, Bull.* no. 46, 392 pp., 70 figs., 1925.

Krueger, Hans.

1. Die Hessische Grönland expedition, 1925; geologische Ergebnisse: *Petermanns Mitt.*, Jg. 72, H. 5-6, pp. 108-110, 1926.

Kümmel, Henry Barnard. See also Foye, 5; Miller, B. L., 9.

1. Report of the State geologist: New Jersey, Dept. Conservation and Development, *Ann. Rept.*, 1918, pp. 29-62, 2 pls., 1919.
2. Report of the State geologist: New Jersey, Dept. Conservation and Development, *Ann. Rept.*, 1919, pp. 31-53, 1919.
3. Report of the State geologist: New Jersey, Dept. Conservation and Development, *Ann. Rept.*, 1920, pp. 33-78, Trenton, N. J., 1920.
4. Report of the State geologist: New Jersey, Dept. Conservation, *Ann. Rept.*, 1921, pp. 27-52, 2 pls., Trenton, 1921.
5. Report of the State geologist [1921-23]: New Jersey, Dept. Conservation, *Ann. Rept.* 1922-23, pp. 21-36, 3 pls., 1923.
6. Memorial of John Conover Smock: *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 93-100, portr., March 30, 1927.
7. State geological surveys: *Sci. Monthly*, vol. 25, no. 5, pp. 445-450, November, 1927.
8. Memorial of Mayville W. Twitchell: *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 47-51, portr., March 30, 1928.

Kuhn, Olin R.

1. How much coal is left in Pennsylvania?: *Coal Age*, vol. 27, no. 6, pp. 209-214, 6 figs., February 5, 1925.
2. Iron ore deposits of Cuba: *Eng. and Min. Jour.-Press*, vol. 121, no. 15, pp. 607-610, 5 figs., April 10, 1926.

Kunz, George Frederick.

1. Reminiscences of William E. Hidden: *Amr. Mineralogist*, vol. 4, nos. 8, 10, 11, pp. 100, 128-129, 142-145, August, October, and November, 1919.
2. Alfred Joseph Moses; a biographical sketch: *Mining and Metallurgy*, no. 162, pp. 20-21, portr., June, 1920.

Kupferbürger, W.

1. Danburite from La Sirena, near Zimapan, Mexico: *Am. Mineralogist*, vol. 10, no. 1, pp. 14-15, January, 1925.

Labbe, Charles.

1. The placers of the Johnnie district, Nevada: *Eng. and Min. Jour.*, vol. 112, no. 23, pp. 895-896, December 3, 1921.

Lacroix, A.

1. Les caractéristiques lithologiques des Petites Antilles: *Soc. Géol. Belgique, Livre Jubilaire, 1874-1924*, t. 1., pp. 385-405 [n. d., 1928?].

Ladd, George E.

1. Landslides and their relation to highways; a report of observations made in West Virginia and Ohio to determine the cause of slides and devise means of control: *Public Roads*, vol. 8, no. 2, pp. 21-31, 35, April, 1927.

Ladd, Harry S. See also Stainbrook, 2, 3; Thomas, A. O., 22; Wentworth, 33.

1. Maquoketa shales in Jackson County (abstract): *Pan-Am. Geologist*, vol. 42, no. 5, pp. 377-378, December, 1924.
2. Depauperate fauna of the Maquoketa (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 228, March 30, 1925.
3. Notes on the geology of Jackson County, Iowa: *Iowa Acad. Sci., Proc.*, vol. 31, pp. 341-345 [1926?].
4. Maquoketa faunas (abstract): *Pan-Am. Geologist*, vol. 49, no. 3, p. 227, April, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 291-292, March 30, 1928.

Ladoo, Raymond Bardeen.

1. Bauxite; occurrence, mining, and uses: *Eng. and Min. Jour.-Press*, vol. 114, no. 19, pp. 805-809, 1 fig., November 4, 1922.
2. Talc and soapstone; their mining, milling, products, and uses: *U. S., Bureau of Mines, Bull.* 213, 133 pp., 23 figs., 15 pls., 1923.
3. Barytes; occurrence, mining, uses: *Eng. and Min. Jour.-Press*, vol. 115, no. 7, pp. 319-324, 8 figs., February 17, 1923.
4. Nonmetallic minerals; occurrence, preparation, utilization. 686 pp., 51 figs., McGraw-Hill Book Company, New York, 1925.
5. Fluorspar, its mining, milling, and utilization, with a chapter on cryolite: *U. S. Bur. Mines, Bull.* 244, 185 pp., 26 figs., 1927.

LaForge, Laurence. See also Hull, 1.

1. [The Fall Line]: *Min. Congress Jour.*, vol. 5, no. 8, p. 272, August, 1919.
2. [The use of the words talus and shingle] (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 16, pp. 500-501, October 4, 1919.

LaForge, Laurence—Continued.

3. The fossil swamp deposit at the Walker Hotel site, Connecticut Avenue and De Sales Street, Washington, D. C.; the geographic and historical evidence: *Washington Acad. Sci., Jour.*, vol. 14, no. 1, pp. 33-41, 2 figs., January 4, 1924.
4. (and Cooke, Wythe, Keith, Arthur, and Campbell, Marius). *Physical geography of Georgia*; with an introduction by S. W. McCallie: *Georgia Geol. Survey, Bull.* no. 42, 189 pp., 6 figs., 43 pls., 1925.

Lagler, Carl. See Staub, Walther, 1.

Lago, Manuel García. See also Allende, 4.

1. Minas de "Asiento Viejo"; estudio del yacimiento de la mina "Celia Gregoria": *Cuba, Dirección de montes y minas, Bol. minas*, no. 8, pp. 57-60, August, 1925.

La Gorce, John Oliver.

1. Pirate rivers and their prizes: *Nat. Geog. Mag.*, vol. 50, no. 1, pp. 87-132, 44 figs., July, 1926.

Lahee, Frederic Henry. See also Collingwood, 1; Foley, 1; Lupton, 1; Mills, R. V. A., 5; Pratt, W. E., 7, 9.

1. Graphic determination of dip components where dips are measured in feet per mile: *Econ. Geology*, vol. 14, no. 2, pp. 176-178, 1 fig., March-April, 1919; no. 3, pp. 262-263, May, 1919.
2. Geologic factors in oil prospecting: *Econ. Geology*, vol. 14, no. 6, pp. 480-490, 5 figs., September-October, 1919.
3. The barometric method of geologic surveying for petroleum mapping: *Econ. Geology*, vol. 15, no. 2, pp. 150-169, 8 figs., March, 1920.
4. Relation of oil pools to ancient shore lines (discussion): *Econ. Geology*, vol. 15, no. 4, pp. 350-354, June, 1920.
5. Use of the terms "erosion," "denudation," "corrasion," and "corrosion": *Science, new ser.*, vol. 54, p. 13, July 1, 1921.
6. Field methods in petroleum geology. In Day, David T., *A handbook of the petroleum industry*, vol. 1, pp. 167-201, 30 figs., 1922.
7. Temperature of fluids in wells: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 6, pp. 547-548, November-December, 1922.
8. *Field geology*. Second edition, 649 pp., 457 figs., 1 pl., New York, McGraw-Hill Book Company, 1923.
9. The Currie field, Navarro County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 1, pp. 25-36, 8 figs., January-February, 1923.
10. Sericitization and dolomitization compared with the fixed carbon ratio of coal as indices of metamorphism in oil-bearing formations: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 3, pp. 291-293, May-June, 1923.
11. The New Richland [oil] field, Navarro County, Texas: *Mining and Metallurgy*, vol. 5, no. 212, pp. 379-380, August, 1924.
12. Note on the origin of petroleum: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 5, pp. 669-671, 2 figs., September-October, 1924.
13. Structural and stratigraphic data of northeast Texas: *Econ. Geology*, vol. 19, no. 6, pp. 563-565, September-October, 1924.
14. The education of the geologist: *Econ. Geology*, vol. 19, no. 7, pp. 684-686, November, 1924.
15. The permeability of rocks: *Econ. Geology*, vol. 19, no. 8, pp. 768-769, December, 1924.

Lahee, Frederic Henry—Continued.

16. The Wortham and Lake Richland faults [Texas]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 1, pp. 172-175, 2 figs., January-February, 1925.
17. Comparative study of well logs on the Mexia type of structure: *Am. Inst. Min. and Met. Eng., Trans.* [preprint], no. 1396, 21 pp., 16 figs., February, 1925; (with discussion), *Trans.*, vol. 71, pp. 1329-1350, 16 figs., 1925; abstract, *Mining and Metallurgy*, vol. 6, no. 220, pp. 203-205, 1 fig., April, 1925.
18. The rate of solution of gypsum: *Jour. Geology*, vol. 33, no. 5, pp. 548-549, July-August, 1925.
19. Further notes on the origin and nature of the Currie structure, Navarro County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 1, pp. 61-71, 6 figs., January, 1926.
20. Clay Creek dome, Washington County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 12, pp. 1166-1167, December, 1928.*

Laird, George A.

1. Wildcat drilling in Warren County, Kentucky: *Eng. and Min. Jour.*, vol. 109, p. 1031, May 1, 1921.

Laizure, C. McK.

1. Bibliography of limestone deposits in California: *California State Min. Bur., Mining in California*, vol. 18, no. 12, pp. 751-754, December, 1922.

Lajous, Luis F.

1. Informe sobre los terrenos petrolíferos de la región Tabasco-Chiapas, en las zonas de Pichucalco, Macuspana, El Salto, La Trinidad, San Pedro Sabana, Palenque, Montecristo y Tenosique: *Bol. Petróleo, Mexico*, vol. 16, no. 5, pp. 305-324, 1 pl. (map), November, 1923.
2. Condiciones geológicas necesarias para la formación y conservación del petróleo: *Bol. Petróleo, Mexico*, vol. 6, pp. 357-368, December, 1923.
3. La formación de los domos salinos en la costa del golfo: *Bol. Petróleo*, vol. 26, no. 3, pp. 278-288, September, 1928.

Lake, Francis Wilbur. See Phelps, 1.

Lakes, Arthur.

1. The Hahn's Peak mining region, Routt County, Colorado: *Mountain States Mineral Age*, vol. 12, no. 7, pp. 10-14, 6 figs., July 1927. Reprinted from *Mining Science*, vol. 60, pp. 292-296, September 30, 1909.

Lamar, John Everts. See, also Krey, 3.

1. Notes on the Waterloo anticline: *Illinois Acad. Sci., Trans.*, vol. 15, pp. 398-404 [1923].
2. The use of the microscope in the study of subsurface stratigraphy: *Illinois State Acad. Sci., Trans.*, vol. 16, pp. 353-358, 1923.
3. Geology and mineral resources of the Carbondale quadrangle: *Illinois State Geol. Survey, Bull.* no. 48, 172 pp. 28 figs., 5 pls. (incl. maps), 1925.
4. Glacial phenomena in the vicinity of Carbondale: *Illinois State Acad. Sci., Trans.*, vol. 17, pp. 181-186, 1925.
5. The oolite of the Ste. Genevieve formation: *Illinois State Acad. Sci., Trans.*, vol. 18, pp. 409-413, 5 pls., 1925.

Lamar, John Everts—Continued.

6. Preliminary report on the economic mineral resources of Calhoun County: Illinois State Geol. Survey, Rept. Investigations no. 8, 21 pp., 1 fig., 1926.
7. Sedimentary analysis of the limestones of the Chester series: Econ. Geology, vol. 21, no. 6, pp. 578-585, 3 figs., September, 1926.
8. New facts concerning the St. Peter sandstone of Illinois: Geol. Soc. America, Bull., vol. 38, no. 3., pp. 459-468, 7 figs., September, 1927; abstract, no. 1, p. 147, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 152, March, 1927.
9. Geology and economic resources of the St. Peter sandstone of Illinois: Illinois State Geol. Survey, Bull. no. 53, 175 pp., 43 figs., 3 pls. (map), 1928.
10. Preliminary report on the fuller's earth deposits of Pulaski County: Illinois State Geol. Survey Rept. of Investigations no. 15, 31 pp., 8 figs. (incl. map), 1928.
11. Cretaceous, Tertiary and Quaternary formations of extreme southern Illinois (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 203-204, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 155, March, 1928.
12. Karst topography and sanitary engineering at Alton, Illinois: Illinois State Acad. Sci., Trans., vol. 20, pp. 261-264, 1 fig., March, 1928.
13. A study of the core of the Yanaway well no. 33 in the Siggins pool: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 15, pp. 1-8, 1 fig., May 12, 1928.

Lamb, Horace.

1. The constitution of the earth: Science, new ser., vol. 62, pp. 229-236, September 11, 1925.
2. Physical constitution of the earth: Pan-Am. Geologist, vol. 44, no. 5, pp. 345-356 December, 1925.

Lambart, H. F. J.

1. Notes on the Klutlan Glacier and glaciers of the Pacific coast ranges through Canada and Alaska: Canadian Alpine Jour., vol. 11, pp. 147-155, 3 pls., 1920.

Lambe, Lawrence Morris, 1863-1919.

1. The hadrosaur *Edmontosaurus* from the Upper Cretaceous of Alberta: Canada, Geol. Survey, Mem. 120, 79 pp. 39 figs., 1920.
2. Description of a new genus and species (*Panoplosaurus mirus*) of an armored dinosaur from the Belly River beds of Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 13 sec. 4, pp. 39-50, 12 pls., 1920.

Lambert, G. S. See Clapp, C. H., 2; Wilson, R. A., 5.

Lambert, Jules.

1. Nouvelles observations sur quelques échinides néogènes de l'île d'Anguilla: Annals and Mag. Nat. Hist., 9th ser., vol. 9, pp. 587-596, 1 pl., May, 1922.
2. Note sur quelques échinides recueillis par Mr. Walther Staub dans le Néogène de l'est du Mexique: Eclogae geologicae Helvetiae, vol. 21, no. 1, pp. 272-283, 6 figs., 1 pl., 1928.

Lambert, Walter Davis.

1. The internal constitution of the earth: Washington Acad. Sci., Jour., vol. 10, no. 5, pp. 122-143, March 4, 1920.

Lambert, Walter Davis—Continued.

2. Elastic yielding of the earth's crust under a load of sedimentary deposits: Geol. Soc. America, Bull., vol. 34, no. 2, pp. 305-308, June 30, 1923.
3. The mechanics of the Taylor-Wegener hypothesis of continental migration (abstract): Washington Acad. Sci., Jour., vol. 13, no. 20, pp. 448-450, December 4, 1923.
4. Forces tending to cause movements in the earth's crust (abstract): Nat. Research Council, Bull., vol. 7, pt. 5, no. 41, p. 93, January, 1924.

Lamborn, Raymond E. See also Stout, 5.

1. The Olentangy shale in southern Ohio: Jour. Geology, vol. 35, no. 8, pp. 708-722, 1 fig. (map), November-December, 1927.

Land, Alfred C. See Fairbanks, 12.

Landell-Mills, Thomas.

1. (and others). The Carboniferous rocks of the Deer Lake district of Newfoundland (abstract with discussion): Geol. Soc. London, Abstr. Proc., no. 1083, pp. 53-54, March 2, 1922.

Landero, Carlos F. de.

1. Correlación de las formaciones diatomíferas y los yacimientos de petróleo de Alta California: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 43, nos. 1-2, pp. 95-101, January-February, 1924. Bol. petróleo, Mexico, vol. 16, no. 3, pp. 158-161, September, 1923; vol. 19, no. 3, pp. 139-142, March, 1925.

Landes, Henry.

1. History of geology in the State of Washington: Washington Hist. Quart., vol. 19, no. 4, pp. 243-249, October, 1928.

Landes, Kenneth K. See also Moore, R. C., 37.

1. The paragenesis of the granite pegmatites of central Maine: Am. Mineralogist, vol. 10, no. 11, pp. 355-411, 5 figs., 7 pls., November, 1925.
2. Geology of the Knik-Matanuska district, Alaska: U. S. Geol. Survey, Bull. 792, pp. 51-72, 1 pl. (map), 1927.
3. A petrographic study of the pre-Cambrian of Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 8, pp. 821-824, August, 1927.
4. Volcanic ash in Kansas: Geol. Soc. America, Bull., vol. 39, no. 4, pp. 931-940, 3 figs., December, 1928; abstract, no. 1, p. 166, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 1, p. 75, February, 1928.
5. Volcanic-ash resources of Kansas: Kansas State Geol. Survey, Bull. 14, 58 pp., 1 fig., 5 pls., April 15, 1928.
6. Sequence of mineralization in the Keystone, South Dakota, pegmatites: Am. Mineralogist, vol. 13, no. 10, pp. 519-530, no. 11, pp. 537-558, 5 figs., October and November, 1928.
7. Lithium, caesium, and rubidium: Foote-Prints, vol. 1, no. 3, pp. 5-17, 1928.

Landon, Robert E.

1. Roemerite from California: Am. Mineralogist, vol. 12, no. 7, pp. 279-283, 2 figs., July, 1927.

Lane, Alfred Church. See also Hotchkiss, 7; Rogers, A. F., 7; Stauffer, 9; White, I. C., 2.

1. Table for determining common rocks: Lefax, Philadelphia, January, 1919.
2. Tables [I-XIX] for the recognition of minerals: Lefax, Philadelphia, 1919-22 (?). [Only part seen.]

Lane, Alfred Church—Continued.

3. Geological column; France, Britain, Germany, United States: Lefax, Philadelphia, October, 1919.
4. Correlation of formations of Huronian group in Michigan (discussion of paper by R. C. Allen): *Am. Inst. Min. and Met. Eng., Bull.* no. 156, pp. 3113–3115, December, 1919.
5. Till argillites (pellodites), pre-Cambrian, Permian, and Pleistocene (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 125, March 31, 1920.
6. Accordant levels in the White Mountains (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 53, March 31, 1921.
7. White Mountain physiography: *Am. Jour. Sci.*, 5th ser., vol. 1, no. 4, pp. 349–354, April, 1921.
8. Segregation granites: *Jour. Geology*, vol. 30, no. 2, pp. 162–166, February–March, 1922.
9. Is the present the first of a new chapter? (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 141, March 31, 1922.
10. Weight of sedimentary rocks per unit volume: *Geol. Soc. America, Bull.*, vol. 33, no. 2, pp. 353–369, 1 fig., June 30, 1922.
11. Keweenaw geothermal gradients and the ice age (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 86, March 30, 1923.
12. Solvents and precipitants in the Michigan copper lodes (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 100, March 30, 1923.
13. [Terms for shapes of valleys]: *Jour. Geology*, vol. 31, no. 4, p. 348, May–June, 1923.
14. The temperature of mines: *Science*, new ser., vol. 57, p. 142, August 24, 1923.
15. Geotherms of Lake Superior copper country: *Geol. Soc. America, Bull.*, vol. 34, no. 4, pp. 703–720, 1 pl., December 30, 1923.
16. The importance of water analyses: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 1, pp. 87–88, January–February, 1924.
17. Memorial of Marshman E. Wadsworth: *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 15–25, portr., March 30, 1924.
18. Native silver in an iron mine (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 127–128, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 160, March, 1924.
19. The geologic time scale: *Eng. and Min. Jour.-Press*, vol. 118, no. 20, p. 778, November 15, 1924.
20. Measurement of geological age by atomic disintegration: *Lake Superior Min. Inst., Proc. 24th Ann. Meeting*, vol. 24, pp. 106–116, 1925; abstract, *Pan-Am. Geologist*, vol. 45, no. 2, pp. 157–158, March, 1926.
21. Laurentian problems and atomic disintegration: *Canadian Inst. Min. and Met.*, *Bull.* no. 157, pp. 484–508, May, 1925; *Trans.*, vol. 28, pp. 102–129 [1926].
22. On the relative ages of pre-Cambrian rocks: *Canadian Min. Jour.*, vol. 46, no. 24, pp. 579–581, June 12, 1925.
23. The age of the earth and the oceans (abstract): *Washington Acad. Sci., Jour.*, vol. 15, no. 13, pp. 304–305, July 19, 1925.
24. Graphs of rock analyses (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 148, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 1, p. 96, February, 1926.
25. Geologic age calculations: *Science*, new ser., vol. 64, p. 119, July 30, 1926.

Lane, Alfred Church—Continued.

26. Nathaniel Southgate Shaler (1841-1906): *Am. Acad. Arts and Sci., Proc.*, vol. 61, pp. 557-561, November, 1926.
27. Calcium chloride waters, connate and diagenetic: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 12, pp. 1283-1305, December, 1927.
28. Calcium chloride waters (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 123, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, pp. 71-72, February, 1927.
29. Till on overthrust gravels (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 151, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 67, February, 1928.
30. Geologic age by lead uranium ratios: *Science, new ser.*, vol. 67, p. 631, June 22, 1928.

Lane, H. H.

1. A new rhinoceros from Kansas [*Paraphelops rooksensis* n. sp.]: *Kansas, Univ., Bull.*, vol. 28, no. 18, *Sci. Bull.*, vol. 17, no. 2, pp. 297-307, 4 pls., September, 1927.

Lane, Laura Lee. See Deussen, 2.

Laney, Francis Baker. See also Bastin, 1; Emmons, W. H., 8; Livingston, 3; Piper, 6.

1. (and Kirkham, V. R. D., and Piper, A. M.). Ground water supply at Moscow, Idaho: *Idaho, Bur. Mines and Geology, Pamph.* no. 8, 13 pp., 2 pls., December, 1923. [Mimeographed.]

Lang, S. S.

1. Porphyry intrusions of the Michigan copper district: *Eng. and Min. Jour.*, vol. 107, p. 452, March 8, 1919.
2. Copper deposits of Lake Superior: *Min. and Sci. Press*, vol. 121, pp. 407-408, September 18, 1920.

Lang, Walter B.

1. Terms of the geologic column; their origin and significance. In *The development of the sciences*, edited by L. L. Woodruff, pp. 312-314, New Haven, Yale University Press, 1923.
2. Potash investigations in 1924: *U. S. Geol. Survey, Bull.* 785, pp. 29-43, 2 figs., 1 pl., May 20, 1926.
3. Unusual natural gases: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 11, pp. 1176-1177, November, 1926.
4. A correction for well logs: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 10, pp. 1116-1117, October, 1927.

Langford, George B.

1. Shiningtree silver area, District of Timiskaming: *Ontario Dept. Mines, 36th Ann. Rept.*, vol. 36, pt. 2, pp. 87-99, illus., map, 1927.
2. Wasapika section, West Shiningtree gold area, District of Sudbury: *Ontario Dept. Mines, 36th Ann. Rept.*, vol. 36, pt. 2, pp. 100-104, map, 1927.

Langley, A. G.

1. Mining in the Kootenays: *Canadian Min. Jour.*, vol. 44, no. 25, pp. 472-474, June 22, 1923.

Lanning, J.

1. The gypsum deposits of Moose River [northern Ontario]: *Canadian Min. Jour.*, vol. 47, no. 50, pp. 1172-1174, 4 figs., December 10, 1926.

Lapham, Macy H.

1. Fossil remains in the loess of eastern Washington: *Science*, new ser., vol. 65, pp. 446-447, May 6, 1927.

Larde, Jorge.

1. El terremoto del 6 de septiembre de 1915 y los demás terremotos de El Salvador. 71 pp., Observatorio Meteorológico y Sismológico de El Salvador, San Salvador, C. A., Imprenta Nacional [1916].
2. El volcán de Izalco. 120 pp., illus., San Salvador, C. A., Imprenta Nacional, 1923.
3. Geología general de Centro América y especial de El Salvador. 82 pp., San Salvador, Imprenta Nacional [1924].
4. El volcán de Izalco en El Salvador, America Central, de 1922 á 1925: *Bull. volcanologique*, 2^e ann., nos. 5-6, pp. 209-211, 1925.

Large, Thomas.

1. The glaciation of the Cordilleran region: *Science*, new ser., vol. 56, pp. 335-336, September 22, 1922.
2. Glacial border of Spokane [Washington]: *Pan-Am. Geologist*, vol. 38, no. 5, pp. 359-366, December, 1922.
3. Drainage changes in northeastern Washington and northern Idaho since extravasation of Columbia basalts: *Pan-Am. Geologist*, vol. 41, no. 4, pp. 259-270, 4 pls., May, 1924.

Larsen, Esper Signius. See also Diller, 5; Emmons, W. H., 4; Foshag, 13; Gage, 1; Hess, 11; Pardee, 5; Shannon, 53, 63.

1. The occurrence of cinnabar near Black Pine, Idaho: *Idaho, Univ., School of Mines*, vol. 14, Bull. no. 2, pp. 65-67, January, 1919.
2. (and Shannon, Earl V.). Boussingaultite from South Mountain near Santa Paula, California: *Am. Mineralogist*, vol. 5, no. 7, pp. 127-129, July, 1920.
3. (and Livingston, D. C.). Geology of the Yellow Pine cinnabar-mining district, Idaho: *U. S. Geol. Survey, Bull.* 715, pp. 73-83, 2 figs. (incl. map), September 15, 1920; abstract, *Washington Acad. Sci., Jour.*, vol. 11, no. 8, pp. 192-193, April 19, 1921.
4. (and Glenn, M. L.). Some minerals of the melanterite and chalcantite groups with optical data on the hydrous sulphates of manganese and cobalt: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 225-233, September, 1920.
5. (and Ross, Clarence S.). The R and S molybdenum mine, Taos County, New Mexico: *Econ. Geology*, vol. 15, no. 7, pp. 567-573, November, 1920.
6. The microscopic determination of nonopaque minerals: *U. S. Geol. Survey, Bull.*, 679, 294 pp., 14 figs., 1 pl., 1921.
7. (and Foshag, W. F.). Merwinite, a new calcium-magnesium orthosilicate from Crestmore, California: *Am. Mineralogist*, vol. 6, no. 10, pp. 143-148, 1 fig., October, 1921.
8. Supplementary report on the geology of the areas covered by the Wagon Wheel Gap experiment stations, Rio Grande National Forest, Colorado: *Monthly Weather Review, Supplement* no. 17, pp. 3-4, 1922.
9. (and Shannon, E. V.). Bustamite from Franklin Furnace, New Jersey: *Am. Mineralogist*, vol. 7, no. 6, pp. 95-100, June, 1922.
10. (and Shannon, E. V.). Notes on some new rhodonite specimens from Franklin Furnace, New Jersey: *Am. Mineralogist*, vol. 7, no. 9, pp. 149-152, September, 1922.

Larsen, Esper Signius—Continued.

11. The identity of eakleite and xonotlite: *Am. Mineralogist*, vol. 8, no. 10, pp. 181-182, September, 1923.
12. (and Shannon, Earl V.). Ganophyllite from Franklin Furnace, New Jersey: *Am. Mineralogist*, vol. 9, no. 12, pp. 238-240, December, 1924.
13. (and Schaller, Waldemar T.). The identity of variscite and peganite and the dimorphous form, metavariscite: *Am. Mineralogist*, vol. 10, no. 2, pp. 23-28, February, 1925.
14. (and Vassar, Helen E.). Chalcoalumite, a new mineral from Bisbee, Arizona: *Am. Mineralogist*, vol. 10, no. 4, pp. 79-83, April, 1925.
15. The identity of ectropite and bementite: *Am. Mineralogist*, vol. 10, no. 11, pp. 418-421, November, 1925.
16. (and Wherry, Edgar T.). Beidellite, a new mineral name: *Washington Acad. Sci., Jour.*, vol. 15, no. 21, pp. 465-466, December 19, 1925.
17. (and Berman, Harry). The identity of gilpinite and johannite: *Am. Mineralogist*, vol. 11, no. 1, pp. 1-5, 2 figs., January, 1926.
18. (and Hess, F. L., and Schaller, W. T.). Uranium minerals from Lusk, Wyoming: *Am. Mineralogist*, vol. 11, no. 6, pp. 155-164, June, 1926.
19. (and Foshag, William F.). Cancrinite as a high-temperature mineral from Colorado: *Am. Mineralogist*, vol. 11, no. 11, pp. 300-303, November, 1926.
20. (and Steiger, George). Dehydration and optical studies of alunogen, nontronite, and griffithite: *Am. Jour. Sci.*, 5th ser., 15, pp. 1-19, 3 figs., January, 1928.
21. A hydrothermal origin of corundum and albitite bodies: *Econ. Geology*, vol. 23, no. 4, pp. 398-433, 4 figs., June-July, 1928.
22. Origin of the albitite bodies of Pennsylvania and elsewhere (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 162-163, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, pp. 72-73, February, 1928.
23. (and Bauer, L. H., and Berman, H.). Norbergite from Franklin, New Jersey: *Am. Mineralogist*, vol. 13, no. 7, pp. 349-353, 1 fig., July, 1928.
24. The optical properties of the humite group: *Am. Mineralogist*, vol. 13, no. 7, pp. 354-359, July, 1928.

Larsen, J. A.

1. Soil shifting and deposits: *Science*, new ser., vol. 55, p. 457, April 28, 1922.

La Rue, E. C. See Bryan, 28.

Lasky, Samuel G.

1. Transverse faults at Kennecott [Alaska], and their relation to the main fault systems: *Am. Inst. Min. and Met. Eng., Tech. Pub. no. 152*, 17 pp., 10 figs., November, 1928.

Laughlin, Homer.

1. (and Arnold, Ralph, and Kew, William S. W.). Southern California earthquake of July 22, 1923: *Seismol. Soc. America, Bull.*, vol. 13, no. 3, pp. 105-106, 1 pl., September, 1923.

Lausen, Carl.

1. (and Wilson, E. D.). Gold and copper deposits near Payson, Arizona: *Arizona, Univ., Arizona Bur. Mines, Bull. no. 120*, 44 pp., 3 figs., 5 pls., December 1, 1925; *Min. Jour., Phoenix, Ariz.*, vol. 10, no. 19, pp. 5-7, 12-14, February 28, 1927.

Lausen, Carl—Continued.

2. Tourmaline-bearing cinnabar veins of the Mazatzal Mountains, Arizona: *Econ. Geology*, vol. 21, no. 8, pp. 782–791, 2 figs., December, 1926.
3. (and Gardner, E. D.). Quicksilver (mercury) resources of Arizona: Arizona, Bur. Mines, Bull. no. 122, 112 pp., 23 figs., 15 pls., June 1, 1927.
4. Piedmontite from the Sulphur Spring Valley, Arizona: *Am. Mineralogist*, vol. 12, no. 7, pp. 283–287, 1 fig., July, 1927.
5. The occurrence of olivine bombs near Globe, Arizona: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 293–306, 4 figs., October, 1927.
6. Hydrous sulphates formed under fumerolic conditions at the United Verde mine [Jerome, Arizona]: *Am. Mineralogist*, vol. 13, no. 6, pp. 203–229, 7 figs., June, 1928.

Lavington, Charles S.

1. An oil seep in north central Nevada: *Am. Assoc. Petroleum Geologists Bull.*, vol. 11, no. 10, pp. 1117–1118, October, 1927.

Lawler, T. B.

1. On the occurrence of sandstone dikes and chalcedony veins in the White River Oligocene: *Am. Jour. Sci.*, 5th ser., vol. 5, pp. 160–172, 5 figs. February, 1923.

Lawson, Andrew Cowper. See also Atwood, W. W., 4; Bowie, 13; Foye, 10; Grout, 15; Hobbs, 7; Quirke, 11; Stose, 21; Udden, 11; Woodring, 8.

1. The mobility of the coast ranges of California; an exploitation of the elastic rebound theory: California, Univ., Pub., Dept. Geology, Bull. vol. 12, no. 7, pp. 431–473, 19 figs., January 11, 1921; abstract, *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 45, March 31, 1921.
2. Isostatic compensation considered as a cause of thrusting: *Geol. Soc. America, Bull.*, vol. 33, no. 2, pp. 337–351, 9 figs., June 30, 1922.
3. Report on geology of Iron Canyon [Sacramento River, California]. In Report on Iron Canyon Project, California, by Homer J. Gault and W. F. McClure: U. S. Reclamation Service in cooperation with the State of California and the Iron Canyon Project Association, pp. 71–76, Washington, Government Printing Office, 1921.
4. The prediction of earthquakes: *Univ. California Chronicle*, vol. 24, no. 3, pp. 315–336, 9 figs., July, 1922.
5. Work of the division of geology and geography of the National Research Council: *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 80–83, March 30, 1924.
6. The continental shelf off the coast of California: *Nat. Research Council, Bull.*, vol. 8, pt. 2, no. 44, 23 pp., 1 fig., April, 1924.
7. The geological implications of the doctrine of isostasy: *Nat. Research Council, Bull.*, vol. 8, pt. 4, no. 46, 22 pp., June, 1924.
8. The Cypress Plain: California, Univ. [Dept. Geol. Sci., Bull.], Pub. in *Geol. Sci.*, vol. 15, no. 6, pp. 153–158, 1 fig., March 16, 1925.
9. Folded mountains and isostasy: *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 253–273, March 30, 1927.
10. The Cordilleran shield: Third Pan Pacific Sci. Cong., Tokyo, 1926, Proc., pp. 371–388, 1 fig., 1928.

Lawson, C. C. See Schairer, 1, 2.

Lawson, Robert W. See Holmes, 2.

Leavitt, David H. See Reynolds, 1.

Ledoux, A.

1. Sand and gravel in Ontario: Ontario Bur. Mines, Rept. 1918, vol. 27, pt. 2, 138 pp., 45 figs., map, 1918.

Ledoux, Albert Reid, 1852-1923.

1. Singing sands: Science, new ser., vol. 51, pp. 462-464, May 7, 1920.

Lee, Charles H. See Ellis, A. J., 1.

Lee, Howard S.

1. Pyrite deposits of Leadville, Colorado: Am. Inst. Min. and Met. Eng., Trans., vol. 61, pp. 66-70, 1920.

Lee, O. Ivan.

1. (and Wherry, Edgar T.). Manganotantalite from Amelia, Virginia: Am. Mineralogist, vol. 4, no. 7, pp. 80-83, 2 figs., July, 1919.
2. Notes and news of minerals of the rarer elements: Rocks and Minerals, vol. 1, no. 2, pp. 24-25, December, 1926; vol. 2, no. 1, pp. 6-8, March; no. 2, pp. 62-64, June; no. 3, pp. 100-101, September; no. 4, pp. 140-141, December, 1927; vol. 3, no. 1, pp. 16-17, March, 1928.

Lee, R. J.

1. The lignites of Saskatchewan: Canadian Inst. Min. and Met., Monthly Bull. no. 131, Trans. pp. 62-74, 7 figs., March, 1923; Trans., vol. 26, pp. 192-205, 7 figs. [1924].

Lee, Wallace. See also Glenn, 10; Lupton, 1, 2; Rogers, G. S., 8.

1. Description of the Gillespie and Mount Olive quadrangles: U. S. Geol. Survey, Geol. Atlas U. S., Gillespie-Mount Olive folio, Illinois (no. 220), 14 pp., 16 figs., 4 maps, 1926.

Lee, Willis Thomas, 1864-1926. See also Vaughan, 7.

1. Type section of the Morrison formation: Am. Jour. Sci., 4th ser., vol. 49, pp. 183-188, March, 1920. Abstract, with discussion by W. H. Twenhofel, Geol. Soc. America, Bull., vol. 31, no. 1, pp. 135-136, March 31, 1920.
2. Notes on the Manzano group, New Mexico: Am. Jour. Sci., 4th ser., vol. 49, pp. 323-326, May, 1920.
3. Concerning granite in wells in eastern New Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 2, pp. 163-167 (with discussion by John Rich, W. E. Pratt, R. C. Moore, J. W. Beede, and Arthur Eaton, pp. 329-331), March-April, 1921.
4. The Raton mesas of New Mexico and Colorado: Geog. Rev., vol. 11, no. 3, pp. 384-397, 13 figs., July, 1891.
5. The face of the earth as seen from the air; a study in the application of airplane photography to geography: Am. Geog. Soc., Special Pub. no. 4, 110 pp., 82 figs., 1922.
6. Description of the Raton, Brilliant, and Koehler quadrangles: U. S. Geol. Survey, Geol. Atlas U. S., Raton-Brilliant-Koehler folio, New Mexico-Colorado (no. 214), 17 pp., 21 figs., 10 maps, section and illustrations sheet, 1922.
7. Peneplains of the Front Range and Rocky Mountain National Park, Colorado: U. S. Geol. Survey, Bull., 730, pp. 1-17, 3 figs., 8 pls., April 4, 1922.
8. Continuity of some oil-bearing sands of Colorado and Wyoming: U. S. Geol. Survey, Bull. 751, pp. 1-22, 3 figs., 6 pls., April 24, 1923.

Lee, Willis Thomas—Continued.

9. Building of the southern Rocky Mountains: *Geol. Soc. America, Bull.*, vol. 34, no. 2, pp. 285–300, 4 figs., June 30, 1923.
10. Coal resources of the Raton coal field, Cofax County, New Mexico: *U. S. Geol. Survey, Bull.* 752, 254 pp., 18 figs., 22 pls., 1924.
11. Geography, geology, and physiography of the Great Salt Lake basin: *U. S. Geol. Survey, Water-Supply Paper* 517, pp. 3–9, 1924.
12. A visit to Carlsbad Cavern [Guadalupe Mountains, New Mexico]: *Nat. Geog. Mag.*, vol. 45, no. 1, pp. 1–40, 42 figs., January, 1924.
13. Erosion and fill (abstract, with discussion by I. C. White): *Geol. Soc. America, Bull.*, vol. 35, no. 1, p. 99, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, p. 149, March, 1924.
14. Erosion by solution and fill [Pecos Valley, New Mexico]: *U. S. Geol. Survey, Bull.* 760, pp. 107–121, 5 figs., 8 pls., April 4, 1925.
15. Carlsbad Cavern [New Mexico]: *Sci. Monthly*, vol. 21, no. 2, pp. 186–190, August, 1925.
16. New discoveries in Carlsbad Cavern [New Mexico]: *Nat. Geog. Mag.*, vol. 48, no. 3, pp. 301–319, 20 figs., September, 1925.
17. Stories in stone . . . xii, 226 pp., 3 figs., 49 pls., New York, D. Van Nostrand Company, 1926.
18. An ice cave in New Mexico: *Geog. Rev.*, vol. 16, no. 1, pp. 55–59, 3 figs., January, 1926.
19. Correlation of geologic formations between east-central Colorado, central Wyoming, and southern Montana: *U. S. Geol. Survey, Prof. Paper* 149, 80 pp., 5 figs., 35 pls., 1927.

Lees, James Henry. See also Kay, 6; Miller, W. J., 17.

1. A description of the region about Camp Dodge: *Iowa Geol. Survey*, 60 pp., 22 figs., map, 1918.
2. Park sites along Des Moines valley: *Iowa Acad. Sci., Proc.* 1918, vol. 25, pp. 569–585, 2 pls., 13 figs. [1919].
3. Some features of the Fort Dodge gypsum: *Iowa Acad. Sci., Proc.* 1918, vol. 25, pp. 587–597, 11 figs. [1919].
4. (and Thomas, A. O.). The Ste. Genevieve marls near Fort Dodge and their fauna: *Iowa Acad. Sci., Proc.* 1918, vol. 25, pp. 599–616, 1 pl. [1919].
5. The history of Boyer Valley: *Iowa Acad. Sci., Proc.*, vol. 26, pp. 493–500, 2 figs. [1920].
6. Valley gravels of northeastern Iowa (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 49–50, March 31, 1921.
7. The conservation of underground waters: *Iowa Acad. Sci., Proc.*, vol. 27, pp. 187–196 [1922].
8. Mineral production in Iowa for 1917 and 1918: *Iowa Geol. Survey*, vol. 28, pp. 3–46 [1923].
9. Some Pleistocene exposures in Des Moines: *Iowa Acad. Sci., Proc.*, 1921, vol. 28, pp. 59–63 [1923].
10. An unusual well record in northwestern Iowa: *Iowa Acad. Sci., Proc.*, vol. 30, pp. 445–450, 1 fig. [1924]; abstract, *Science*, new ser., vol. 57, p. 147, August 24, 1923.
11. Mineral production in Iowa in 1919 and 1920: *Iowa Geol. Survey*, vol. 29, pp. xxi–xlviii [1924].
12. The structure of the Fort Dodge beds: *Iowa Acad. Sci., Proc.*, 1922, vol. 29, pp. 113–120, 4 figs., [1924?].

Lees, James Henry—Continued.

13. Mineral production in Iowa in 1921 and 1922: Iowa Geol. Survey, vol. 30, pp. 7-32 [1925].
14. Mineral production in Iowa in 1923 and 1924: Iowa Geol. Survey, vol. 31, pp. 9-52 [1926?].
15. Stone axes from Adel [Iowa]: Iowa Acad. Sci., Proc., 1925, vol. 32, pp. 331-334, 2 pls. [1926].
16. Mineral production in Iowa in 1925 and in 1926: Iowa Geol. Survey, vol. 32, pp. 9-50, 1927.
17. Iowa coal areas and characteristics of Iowa coal: Iowa Geol. Survey, vol. 32, pp. 65-81, 1927.
18. Geology of Crawford County: Iowa Geol. Survey, vol. 32, pp. 239-362, 29 figs., map, 1927.

Leffingwell, Ernest de Koven.

1. The Canning River region, northern Alaska: U. S. Geol. Survey, Prof. Paper 109, 251 pp., 35 pls. (incl. maps), 33 figs., 1919. Abstract by J. T. Pardee, Washington Acad. Sci., Jour., vol. 9, no. 13, pp. 375-376, July 19, 1919.

Leggette, Max.

1. The preparation of thin sections of friable rock: Jour. Geology, vol. 36, no. 6, pp. 549-557, August-September, 1928.

Legrave, Michel.

1. Note sur un cas de solifluxion observé dans les Coast Ranges de Californie: Soc. géol. Belgique, Ann., t. 46, 1. 2, pp. B150-152, 1 fig., 1923.
2. Note sur les gisements de pétrole de Californie: Revue Universelle des Mines, ser. 7, t. 4, no. 3, pp. 149-155, November, 1924.

Leighly, J. B. See Ehlers, 6.

Leighton, Henry. See also Pennsylvania, 1; Stone, 11.

1. (and Somers, Ransom E.). An outline and bibliography on the framework of the world: Pittsburgh, Univ., Radio Pub. no. 13, 10 pp., 1925.
2. The geology of Pittsburgh and its environs; a popular account of the general geologic features of the region: Carnegie Mus., Annals, vol. 17, no. 1, pp. 91-162, 8 figs. (incl. maps), 7 pls. (incl. map), June-November, 1926.
3. (and Somers, Ransom E.). A series of eight radio talks on man and the earth, with a select bibliography. Pittsburgh, Univ., Radio Pub. no. 32, 82 pp., 1927.

Leighton, Morris Morgan. See also Bretz, 5; Twenhofel, 22, 29.

1. The road-building sands and gravels of Washington: Washington Geol. Survey, Bull. no. 22, 307 pp., 9 pls. (incl. maps), 36 figs. (outline county maps), 1919.
2. Gravel deposits of Illinois: Illinois Soc. Engineers, 35th Ann. Rept., pp. 73-74, 1920.
3. The present status of the Pleistocene in Illinois (abstract): Science, new ser., vol. 51, p. 521, May 21, 1920.
4. Post-Illinoian drift in northern Illinois west of the mapped Wisconsin moraine (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 86-87, March 31, 1921.
5. The Pleistocene succession near Alton, Illinois, and the age of the mammalian fossil fauna: Jour. Geology, vol. 29, no. 6, pp. 505-514, September-October, 1921.

Leighton, Morris Morgan—Continued.

6. Further data on the differentiation of the glacial drift sheets of northern Illinois (abstract with discussion by Frank Leverett): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 116-117, March 31, 1922.
7. The glacial history of the Sangamon River valley at Decatur and its bearing on the reservoir project: *Illinois State Acad. Sci., Trans.*, vol. 14, pp. 213-218, 1 pl. [1922].
8. The origin of the Cahokia mounds (abstract): *Illinois State Acad. Sci., Trans.*, vol. 16, p. 327, 1923.
9. Pleistocene of northwestern Illinois: a graphic presentation of some of the chief lines of evidence (abstract); Fossiliferous loess beneath tilted Galena dolomite at the border of the Belvidere lobe in northwestern Illinois (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 90, March 30, 1923.
10. The differentiation of the drift sheets in northwestern Illinois: *Jour. Geology*, vol. 31, no. 4, pp. 265-281, 4 figs., May-June, 1923.
11. Geology and the Decatur [Illinois] dam and reservoir project: *Eng. News-Record*, vol. 91, no. 7, pp. 264-266, 2 figs., August 16, 1923.
12. The geological aspects of some of the Cahokia (Illinois) mounds: *Illinois, Univ., Bull.*, vol. 21, no. 6, pp. 57-97, 8 figs., October 8, 1923.
13. Modern geology and its contribution to engineering: *Western Soc. Eng., Jour.*, vol. 28, no. 11, pp. 491-506, 5 figs., November, 1923.
14. The glacial history of the Elgin region: *Illinois State Acad. Sci., Trans.*, vol. 17, pp. 65-71, 1925.
15. Memorial to Dr. Thomas L. Watson: *Science, new ser.*, vol. 61, pp. 255-256, March 6, 1925.
16. Field meeting of the Association of American State Geologists: *Science, new ser.*, vol. 62, pp. 452-453, November 20, 1925.
17. A notable type Pleistocene section; the Farm Creek exposure near Peoria, Illinois: *Jour. Geology*, vol. 34, no. 2, pp. 167-174, 1 fig., February-March, 1926; *Illinois State Geol. Survey, Rept. Investigations*, no. 11, pp. 3-9, 1 fig., 1926; *Illinois State Acad. Sci., Trans.*, vol. 18, pp. 167-174, 1 fig., 1925.
18. Glacial geology and engineering in Illinois: *Illinois State Acad. Sci., Trans.*, vol. 19, pp. 246-249, 1926.
19. State geological surveys: *Am. Year Book*, 1927, pp. 158-162, 1928.
20. Lake Illinois and the question of post-early Wisconsin deformation in northern Illinois (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 215, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 147, March, 1928.
21. Exposure showing late Sangamon loess and early Peorian loess, with their soil zones [Illinois] (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 215, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 147, March, 1928.
22. Studies of glacial sediments in 1927: *Nat. Research Council, Reprint and Circ. Ser.*, no. 85, pp. 43-60, 1928.

Leith, Charles Kenneth. See also Tanton, 17.

1. International control of minerals: *Min. and Sci. Press.* vol. 118, pp. 357-361, March 15, 1919.
2. Internationalization of mineral resources (abstract): *Geol. Soc. America, Bull.*, vol. 30, pp. 107-108, March 31, 1919.
3. Memorial of Charles Richard Van Hise: *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 100-110, portr., March 31, 1920.

Leith, Charles Kenneth—Continued.

4. Geologists as witnesses in mining litigation: *Econ. Geology*, vol. 15, no. 8, pp. 674-680, December, 1920.
5. The economic aspects of geology. 457 pp. 13 figs., New York, Henry Holt and Company, 1921.
6. The structural failure of the lithosphere: *Science*, new ser., vol. 53, pp. 195-207, March 4, 1921.
7. International mineral problems: *Econ. Geology*, vol. 16, no. 3, pp. 222-226, April-May, 1921.
8. Composite nature of rock mass movement: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 84-86, February, 1922.
9. Structural geology; revised edition. 390 pp., 103 figs., New York, Henry Holt and Company, 1923.
10. A layman's view of the theory of isostasy (abstract with discussion by D. F. Higgins and T. P. Shepard): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 57, March 30, 1923.
11. Field versus laboratory evidence in the identification of metamorphic rocks: *Econ. Geology*, vol. 18, no. 3, pp. 288-290, April-May, 1923.
12. Oscar Rohn: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 70, p. 1232, portr., 1924.
13. A sedimentary problem [formation of iron deposits]: *Econ. Geology*, vol. 19, no. 4, pp. 382-385, June-July, 1924.
14. Silicification of erosion surfaces: *Econ. Geology*, vol. 20, no. 6, pp. 513-523, September-October, 1925.
15. Some political aspects of the world manganese situation (with discussion): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 75, pp. 260-271, 1927.
16. Lake Superior pre-Cambrian: *Geol. Soc. America, Bull.*, vol. 38, no. 4, pp. 749-752, December 30, 1927; abstract, no. 1, pp. 110-111, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 66, February, 1927.
17. What is the job of the economic geologist?: *Econ. Geology*, vol. 23, no. 4, pp. 451-453, June-July, 1928.

Leng, Charles W. See Davis, W. T., 1.

Lenher, Victor.

1. Occurrence, chemistry, and uses of selenium and tellurium (with discussion): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 69, pp. 1035-1057, 1923; [preprint] no. 1198, 20 pp., January, 1923.

Leonard, Arthur Gray.

1. The geology of North Dakota: *Jour. Geology*, vol. 27, no. 1, pp. 1-27, 2 figs. (incl. map), January-February, 1919.
2. The surface features of North Dakota and their origin: *North Dakota Univ., Quart. Jour.*, vol. 9, no. 3, pp. 209-219, 2 pls., map, April, 1919.
3. Possibilities of oil and gas in North Dakota: *North Dakota Geol. Survey, Bull.* no. 1, 9 pp., 1920.
4. The White River formation in North Dakota: *North Dakota, Univ., Quart. Jour.*, vol. 12, no. 3, pp. 218-228, 3 pls. (incl. map), April, 1922.
5. Gravel deposits of North Dakota suitable for road surfacing and construction work: *North Dakota, Univ., Quart. Jour.*, vol. 14, no. 4, pp. 383-393, June, 1924.
6. The contest between land and sea near San Diego [California]: *North Dakota, Univ., Quart. Jour.*, vol. 15, no. 2, pp. 135-140, 2 figs., 2 pls., January, 1925.

Leonard, Arthur Gray—Continued.

7. (and Babcock, Earle J., and Dove, Leonard P.). The lignite deposits of North Dakota: North Dakota Geol. Survey, Bull. no. 4, 240 pp., 21 pls. (incl. maps), 1925.
8. The geology of North Dakota; the surface features of North Dakota and their origin; the lignite deposits of North Dakota: North Dakota, Univ., Departmental Bull., vol. 11, no. 1 (College of Engineering, Division of Mines and Mining Experiments, Bull. no. 9), pp. 4-25, 2 figs., January, 1926.
9. Lignitic coals of North Dakota: Pan-Am. Geologist, vol. 45, no. 2, pp. 135-140, 3 pls., March, 1926.
10. The State geological survey during the past twenty-five years [North Dakota]: North Dakota, Univ., Quart. Jour., vol. 18, no. 2, pp. 122-127, 1 pl. (portr.), January, 1928.

Leonard, R. J. See also Schwartz, 15.

1. The hydrothermal alteration of certain silicate minerals: Econ. Geology, vol. 22, no. 1, pp. 18-43, 2 figs., January-February, 1927.
2. Pedestal rocks resulting from disintegration [Texas Canyon, Arizona]: Jour. Geology, vol. 35, no. 5, pp. 469-474, 2 figs., July-August, 1927.
3. An occurrence of schistose galena [Camou, Sonora, Mexico]: Econ. Geology, vol. 23, no. 5, pp. 578-581, 2 figs., August, 1928.

Leonard, William Clement.

1. Facts concerning the Kentucky oil fields . . . 10 pp. [New York, 1919].

Leonardon, E. G. See also Crosby, 7.

1. (and Kelly, Sherwin F.). Exploration for ore by potential methods: Canadian Min. and Met. Bull., no. 189, pp. 157-178, 15 figs., January, 1928; Eng. and Min. Jour., vol. 125, no. 2, pp. 46-49, no. 4, pp. 163-166, 15 figs., January 14 and 28, 1928.
2. (and Kelly, Sherwin F.). Some applications of potential methods to structural studies: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 115, 18 pp., 13 figs., April, 1928; Canadian Min. and Met., Bull. no. 193, pp. 706-725, 13 figs., May, 1928; Canadian Inst. Min. and Met., Trans., vol. 31, pp. 222-241, 13 figs. [1929]; abstract, Mining and Metallurgy, vol. 9, no. 256, p. 193, April, 1928.

Leshner, Carl E.

1. [Maps of] coal fields and producing districts, Pennsylvania, Ohio, Indiana, Illinois, Kentucky, Tennessee, West Virginia, and part of Maryland, Virginia, Alabama and part of Georgia. Scale 1:1,000,000. U. S. Geological Survey, 1919.

LeVene, Clara M. See Schuchert, 32.

Levensaler, Lewis A.

1. The Fairhaven silver-lead district, Alaska: Min. and Sci. Press, vol. 122, pp. 195-196, 1 fig., February 5, 1921.

Leverett, Frank. See also Leighton, M. M., 6; Osborn, 19.

1. Features of the country around Camp Custer [near Battle Creek, Michigan] (abstract): Michigan Acad. Sci., 20th Ann. Rept., pp. 53-54, 1918.
2. Drainage features and uplift of shore lines in Elsie and Perrinton quadrangles [Michigan] (abstract): Michigan Acad. Sci., 20th Ann. Rept., p. 55, 1918.

Leverett, Frank—Continued.

3. Pleistocene epoch [in Minnesota]: U. S. Geol. Survey, Bull. 678, pp. 76-78, 1919.
4. (and Sardeson, Frederick W.). Surface formations and agricultural conditions of the south half of Minnesota: Minnesota Geol. Survey, Bull. no. 14, 147 pp., 9 pls. (incl. map), 15 figs., 1919. Abstract, Washington Acad. Sci., Jour., vol. 10, no. 16, pp. 471-472, October 4, 1920.
5. Glacial and glacial lake features in the vicinity of Kalamazoo: Michigan Acad. Sci., 21st Ann. Rept., pp. 91-92, 1920.
6. Studies on the shore lines of the Saginaw basin [Michigan] (abstract): Michigan Acad. Sci., 22d Ann. Rept., p. 89, 1921.
7. Results of glacial studies in the northern peninsula of Michigan in 1919 (abstract): Michigan Acad. Sci., 22d Ann. Rept., pp. 89-90, 1921.
8. Outline of the Pleistocene history of Mississippi Valley: Jour. Geology, vol. 29, no. 7, pp. 615-626, 2 figs., October-November, 1921.
9. Glacial formations on the Coteau des Prairies (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 101-102, March 31, 1922.
10. What constitutes the Altamont moraine? (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 102-103, 1 fig., March 31, 1922.
11. Old glaciation in the Cordilleran region: Science, new ser., vol. 56, p. 388, October 6, 1922.
12. Memorial of James E. Todd: Geol. Soc. America, Bull., vol. 34, no. 1, pp. 44-51, portr., March 30, 1923.
13. Glacial deposits of Missouri and adjacent districts (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, pp. 91-92, March 30, 1923.
14. Map of the surface formations of the southern peninsula of Michigan: Michigan, Geol. Survey Division, 1924. Scale, 1:750,000.
15. Oldest (Nebraskan?) drift in western Illinois and southeastern Missouri in relation to "Lafayette gravel" and drainage and development (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 69, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 138, March, 1924.
16. Factors that determine direction of ice movement (abstract): Pan-Am. Geologist, vol. 44, no. 2, pp. 152-153, September, 1925.
17. The Pleistocene glacial stages; were there more than four?: Am. Philosoph. Soc., Proc., vol. 65, no. 2, pp. 105-118, 1926.
18. Status of Iowa drift problem (abstract): Pan-Am. Geologist, vol. 45, no. 2, pp. 171-172, March, 1926.
19. Studies of Pleistocene phenomena of Ohio River Basin (abstract): Science, new ser., vol. 63, pp. 484-485, May 7, 1926.
20. Results of glacial investigations in Pennsylvania and New Jersey in 1926 and 1927 (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 151, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 1, pp. 66-67, February, 1928.

Levison, Wallace Goold.

1. Developing crystallized mineral specimens: Am. Mineralogist, vol. 4, no. 2, pp. 14-15, February, 1919.

Levorsen, A. I.

1. Convergence studies in the Mid-Continent region: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 7, pp. 657-682, 18 figs., July, 1927.
2. Oil and gas in Oklahoma; geology of Seminole County: Oklahoma Geological Survey, Bull. no. 40-BB, 70 pp., 15 figs., March, 1928.

Lewis, Alfred Strong.

1. Ore deposits of Cave Creek district in Arizona: Eng. and Min. Jour., vol. 110, no. 15, pp. 713-716, 3 figs. (incl. map), October 9, 1920.

Lewis, F. Park.

1. Fossil eggs in Bermuda: Hobbies (Buffalo Soc. Nat. Hist.), vol. 8, no. 11, pp. 19-23, 2 figs., May, 1928.

Lewis, Frank.

1. Mining quicksilver [Terlingua district, Texas]: Colorado School of Mines Mag., vol. 16, no. 12, pp. 4-6, April, 1927.

Lewis, Frank E. See Gould, C. N., 16.

Lewis, Joseph Volney. See also Spurr, 17; Twenhofel, 16, 18; Wilder, 1.

1. Magnetic and non-magnetic chrome: Econ. Geology, vol. 14, no. 6, pp. 491-494, September-October, 1919.
2. The magmatic origin of barite deposits: Econ. Geology, vol. 14, no. 7, pp. 568-570, November, 1919.
3. Chrome-ore deposits in North Carolina: Eng. and Min. Jour., vol. 109, pp. 1112-1114, 3 figs., May 15, 1920.
4. A manual of determinative mineralogy, with tables for the determination of minerals by means of, I, their physical characters, II, blow-pipe and chemical characters. Third edition, 298 pp., 81 figs., New York, John Wiley & Sons, 1921.
5. Proceedings of the first annual meeting of the Society of Economic Geologists, held at Chicago, Illinois, December 28-29, 1920: Geol. Soc. America, Bull., vol. 32, no. 1, pp. 157-162, March 31, 1921.
6. Deposits of chrome ore in North Carolina: U. S. Geol. Survey, Bull. 725, pp. 101-139, 2 figs., 1 pl. (map), August 4, 1921. Abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 11, no. 20, pp. 494-495, December 4, 1921.
7. Geology and mining of mica: Eng. and Min. Jour.-Press, vol. 113, no. 20, pp. 856-864, 4 figs., May 20, 1922.
8. (and Bauer, L. H.). Cyprine and associated minerals from the zinc mine at Franklin, New Jersey: Am. Jour. Sci., 5th ser., vol. 4, pp. 249-251, September, 1922.
9. Fissility of shale and its relations to petroleum: Geol. Soc. America, Bull., vol. 35, no. 3, pp. 557-590, September 30, 1924; abstract, Geol. Soc. America, Bull., vol. 34, no. 1, pp. 63-64, March 30, 1923.
10. The ghost of the "molten magma": Eng. and Min. Jour.-Press, vol. 118, no. 7, p. 250, August 16, 1924.
11. Mining geology [review of progress in]: Eng. and Min. Jour.-Press, vol. 119, no. 3, pp. 102-104, January 17, 1925.
12. Possible inorganic petroleum: Eng. and Min. Jour.-Press, vol. 120, no. 4, pp. 137-139, July 25, 1925.
13. Progress in mining geology: Eng. and Min. Jour.-Press, vol. 121, no. 3, pp. 103-105, January 16, 1926.
14. Magmatic carbons and hydrocarbons (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 148-149, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 1, p. 96, February, 1926.
15. Geology advances theory of ore deposits: Eng. and Min. Jour., vol. 123, no. 4, pp. 143-145, January 22, 1927.
16. Mining geology: Eng. and Min. Jour., vol. 125, no. 3, pp. 114-115, January 21, 1928.

Lewis, Lyman W. See Palache, 24.

Lewis, Robert Strong.

1. (and Varley, Thomas). The mineral industry of Utah: Utah, Univ., Bull., vol. 10, no. 11 (Utah Engineering Station, Department of Metallurgical Research, Bull. no. 12), 201 pp., map (mining districts), December, 1919.

Lewis, Samuel J.

1. The ore deposits of Mexico: Min. and Sci. Press, vol. 120, pp. 412-420, 2 figs. (maps), March 20, 1920; pp. 443-450, 7 figs., March 27, 1920; pp. 933-939, 6 figs., June 26, 1920; vol. 121, pp. 16-20, 5 figs., July 3, 1920; pp. 375-382, 5 figs., September 11, 1920; pp. 521-528, 5 figs., October 9, 1920.

Ley, Henry A.

1. The relation of quality of oil to structure at El Dorado, Arkansas (with discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 4, pp. 350-361, 1 fig., July-August, 1923.
2. Subsurface observations in southeast Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 4, pp. 445-453, July-August, 1924.
3. The Kirk gas sand in the Graham district, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 6, p. 1024, September, 1925.
4. The granite ridge of Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 1, pp. 95-96, January, 1926.
5. Mississippi lime west of the granite ridge in Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 1, pp. 96-97, January, 1926.
6. The Sheridan test, Ellsworth County, Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 2, p. 109, February, 1926.
7. Age of producing horizon, Rice County, Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 2, pp. 197-198, February, 1926.

Liddle, Ralph Alexander.

1. The Marathon fold and its influence on petroleum accumulation: Texas, Univ., Bull., no. 1847, pp. 9-16, 1 pl., August 20, 1918 [1920].
2. (and Prettyman, T. M.). Geology and mineral resources of Crockett County with notes on the stratigraphy, structure, and oil prospects of the central Pecos Valley: Texas, Univ., Bull. no. 1857, 97 pp., 4 pls. (incl. maps), 6 figs., October 10, 1918 [1920].
3. The geology and mineral resources of Medina County: Texas, Univ., Bull. no. 1860 (October 25, 1918), 177 pp., 9 figs., 9 pls. (incl. map), March, 1921.
4. The geology of Venezuela and Trinidad. 552 pp., 22 figs. (incl. maps), 83 pls., Fort Worth, Texas, J. P. MacGowan [1928].

Light, Margaret. See Bruce, 20.

Lilley, Ernest Raymond.

1. Petroleum provinces of the United States: Eng. and Min. Jour.-Press, vol. 116, no. 6, pp. 243-245, 1 fig. (map), August 11, 1923.
2. Coal as an aid in oil exploration: Eng. and Min. Jour.-Press, vol. 117, no. 25, pp. 1009-1012, 3 figs., June 21, 1924.
3. The oil industry; production, transportation, resources, refining, and marketing. x, 548 pp., 181 figs., New York, D. Van Nostrand Company, 1925.
4. The geology of petroleum and natural gas. 524 pp., 173 figs., New York: D. Van Nostrand Company, 1928.

Lillibridge, H. E.

1. Foraker limestone in Lincoln County (abstract): *Oklahoma Acad. Sci., Proc.*, vol. 2 (Okla. Univ., Bull., new ser. no. 247), p. 89, October 1, 1922.

Lincoln, Francis Church.

1. Mining districts and mineral resources of Nevada. 295 pp., map, Reno, Nevada Newsletter Publishing Company, 1923.
2. Half a century of mining in the Black Hills: *Eng. and Min. Jour.*, vol. 122, no. 6, pp. 205-214, August 7, 1926.
3. Pegmatite mining in the Black Hills [South Dakota]: *Eng. and Min. Jour.*, vol. 123, no. 25, pp. 1003-1006, 4 figs., June 18, 1927.
4. The Etta mine; a unique lithia producer in the Black Hills [South Dakota]: *Eng. and Min. Jour.*, vol. 124, no. 6, pp. 213-214, 2 figs., August 6, 1927.

Lind, Samuel Coville.

1. (and Davis, C. W.). A new deposit of uranium ore [Lusk, Wyoming]: *Science*, new ser., vol. 49, pp. 441-443, May 9, 1919.

Lindgren, Waldemar. See also Bruce, 18; Fairbanks, 12; Howe, E., 1; Shimer, 8; Wheeler, H. A., 3.

1. Mineral deposits. 2d ed., 957 pp., 284 figs., New York, McGraw-Hill Book Company, 1919.
2. (and Loughlin, G. F.). Geology and ore deposits of the Tintic mining district, Utah: *U. S. Geol. Survey, Prof. Paper* 107, 282 pp., 39 pls. (incl. maps), 49 figs., 1919. Abstract, *Washington Acad. Sci., Jour.*, vol. 9, no. 11, pp. 316-317, June 4, 1919.
3. Economic geology as a profession (editorial): *Econ. Geology*, vol. 14, no. 1, pp. 79-86, January-February, 1919.
4. Regarding magmatic nickel deposits: *Econ. Geology*, vol. 15, no. 6, pp. 535-538, September, 1920.
5. Present tendencies in the study of mineral deposits: *Min. and Met. Soc. America, Bull.* no. 145 (vol. 14, no. 2), pp. 42-49, January, 1921.
6. A suggestion for the terminology of certain mineral deposits: *Econ. Geology*, vol. 17, no. 4, pp. 292-294, June-July, 1922.
7. (and Ball, Sydney H.). Summary of proceedings of the Society of Economic Geologists, 1921-22. 24 pp. [n. d., 1923?].
8. The education of the geologist: *Econ. Geology*, vol. 18, no. 4, pp. 405-409, June-July, 1923.
9. Concentration and circulation of the elements from the standpoint of economic geology: *Econ. Geology*, vol. 18, no. 5, pp. 419-442, August, 1923.
10. The colloid chemistry of minerals and ore deposits. In Bogue, Robert Herman (editor), *The theory and application of colloidal behavior*, chapter 18, vol. 2, pp. 445-465, New York, McGraw-Hill Book Company, 1924.
11. (and Davy, W. Myron). Nickel ores from Key West mine, Nevada: *Econ. Geology*, vol. 19, no. 4, pp. 309-319, 2 pls., June-July, 1924.
12. Contact metamorphism at Bingham, Utah: *Geol. Soc. America, Bull.*, vol. 35, no. 3, pp. 507-534, 1 fig., September 30, 1924.
13. Microchemical reactions: *Econ. Geology*, vol. 19, no. 8, pp. 762-764, December, 1924.
14. The cordierite-anthophyllite mineralization at Blue Hill, Maine, and its relation to similar occurrences: *Nat. Acad. Sci., Proc.*, vol. 11, no. 1, pp. 1-4, January 15, 1925.

Lindgren, Waldemar—Continued.

15. Gel replacement, a new aspect of metasomatism: *Nat. Acad. Sci., Proc.*, vol. 11, no. 1, pp. 5-11, January 15, 1925.
16. Metasomatism: *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 247-261, March 30, 1925.
17. Ore deposits of the Jerome and Bradshaw Mountains quadrangles, Arizona: *U. S. Geol. Survey, Bull.* 782, 192 pp., 10 figs., 23 pls. (incl. maps), 1926.
18. Magmas, dikes, and veins (with discussion by J. T. Singewald, W. H. Emmons, J. C. Anderson, J. F. Kemp, R. J. Colony, A. M. Bateman, J. E. Spurr, C. A. Porter, and Blamey Stevens): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 74, pp. 71-126, 4 figs., 1926; *Pam.* no. 1575, 47 pp., June, 1926; *Eng. and Min. Jour.*, vol. 122, no. 4, pp. 125-133, July 24, 1926; abstract, *Mining and Metallurgy*, vol. 7, no. 235, pp. 305-306, July, 1926. Extract, *Canadian Min. Jour.*, vol. 47, no. 34, pp. 821-828, August 20, 1926.
19. World lead deposits: *Mining and Metallurgy*, vol. 7, no. 234, pp. 244-245, June, 1926; *Canadian Min. Jour.*, vol. 47, no. 38, pp. 908-909, September 17, 1926.
20. James Furman Kemp; to his memory: *Econ. Geology*, vol. 22, no. 1, pp. 84-90, January-February, 1927.
21. Hot Springs and magmatic emanations: *Econ. Geology*, vol. 22, no. 2, pp. 189-192, March-April, 1927.
22. Paragenesis of minerals in the Butte veins (discussion): *Econ. Geology*, vol. 22, no. 3, pp. 304-307, May, 1927.
23. Mineral deposits. 3d ed., 1049 pp., 317 figs., New York, McGraw-Hill Book Company, 1928.
24. Research in processes of ore deposition: *Am. Inst. Min. and Met. Eng., Tech. Pub.* no. 78, 14 pp., February, 1928; *Trans.*, vol. 76, pp. 290-307, 1928; abstract, *Mining and Metallurgy*, vol. 9, no. 254, p. 79, February, 1928.
25. Bibliographies, annotated bibliographies, and geological abstracts: *Econ. Geology*, vol. 23, no. 5, pp. 564-568, August, 1928.
26. Report of the committee on processes of ore deposition: *Econ. Geology*, vol. 23, no. 6, pp. 591-611, September, 1928.

Lindly, John M.

1. Pyrite in coal: *Iowa Acad. Sci., Proc.* 1922, vol. 29, pp. 107-109, 3 figs. [1924?].
2. Winfield's deep well: *Iowa Acad. Sci., Proc.* 1922, vol. 29, pp. 110-112 [1924?].
3. Deep well at Brighton (abstract): *Pan-Am. Geologist*, vol. 42, no. 5, p. 380, December, 1924.
4. The deep water well at Brighton: *Iowa Acad. Sci., Proc.*, 1924, vol. 31, pp. 365-367 [1926?].
5. Deep well at Morning Sun [Iowa]: *Iowa Acad. Sci., Proc.*, 1925, vol. 32, pp. 343-344 [1926].
6. Davenport's deep well: *Iowa Acad. Sci., Proc.*, 1927, vol. 34, p. 247 [1928].

Link, Theodore A. See also Chamberlin, R. T., 16.

1. The origin and significance of "epi-anticlinal" faults as revealed by experiments: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 8, pp. 853-866, 9 figs., August, 1927.
2. Epi-anticlinal faults in geologic structures: *Oil Engineering and Technology*, vol. 8, no. 9, pp. 325-328, 4 figs., September, 1927.

Link, Theodore A.—Continued.

3. The oil geology of Alberta: Imperial Oil Review, vol. 12, no. 2, pp. 1-4, April, no. 3, pp. 1-5, June, 1928.
4. Relationship between over- and under-thrusting as revealed by experiments: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 8, pp. 825-854, 952, 36 figs., August, 1928.
5. En échelon folds and arcuate mountains: Jour. Geology, vol. 6, no. 6, pp. 526-538, 12 figs., August-September, 1928.
6. A new species of *Fistulipora* [Canyon formation, Eastland County, Texas]: Jour. Paleontology, vol. 2, no. 3, pp. 87-94, 1 pl., September, 1928.

Linker, S. See also Rae, 1.

1. The relation of peat to oil shale: Am. Peat. Soc., Jour., vol. 18, no. 2, pp. 45-49, April, 1925.

Linton, Robert.

1. Tertiary clays of southern California: Am. Ceramic Soc., Jour., vol. 11, no. 10, pp. 771-781, 4 figs., October, 1928.

Lipman, Charles B.

1. The discovery of living microorganisms in ancient rocks: Science, new ser., vol. 68, pp. 272-273, September 21, 1928.

Little, George, 1837-1923.

1. Memoirs of George Little. 125 pp., Tuscaloosa [Alabama], Weatherford Printing Company, 1924.

Little, Homer Payson. See also Mathews, 3.

1. A flowing artesian well at Winslow, Maine: Science, new ser., vol. 49, pp. 24-25, January 3, 1919.
2. Geology as a profession: Science, new ser., vol. 54, pp. 619-622, December 23, 1921.
3. List of manuscript bibliographies in geology and geography: National Research Council, Reprint and Circular Series, no. 27, 17 pp., 1922.
4. Erosional cycles in the Front Range of Colorado and their correlation (with discussion): Geol. Soc. America, Bull., vol. 36, no. 3, pp. 495-512, 11 figs., September 30, 1925; abstract, no. 1, p. 138, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 1, p. 79, February, 1925.

Little, James M.

1. Bisbee [Arizona] geology (discussion): Eng. and Min. Jour., vol. 123, no. 24, p. 970, June 11, 1927.

Littlefield, Max Sylvan.

1. Lake Huron winter beach forms: Iowa Acad. Sci., Proc., vol. 30, pp. 451-453, 2 figs. [1924].
2. Preliminary report on an investigation of the molding sand resources of Illinois: Illinois State Geol. Survey, Rept. Investigations no. 3, 37 pp., 1925.
3. Natural-bonded molding sand resources of Illinois: Illinois State Geol. Survey, Bull. no. 50, 183 pp., 49 figs., 1925.
4. Mississippi River gravels below the mouth of the Arkansas River (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 147, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 152, March, 1927.

Livingston, Douglas Clermont. See also Larsen, 3; Umpleby, 2; Varley, 1.

1. Geology of Idaho. In Northwest Mines Handbook, vol. 1, pp. 21-26, published by Sidney Norman, Spokane, Washington, 1918.

Livingston, Douglas Clermont—Continued.

2. Tungsten, cinnabar, manganese, molybdenum, and tin deposits of Idaho: Idaho, Univ., School of Mines, vol. 14, Bull. no. 2, 67 pp., 7 pls., January, 1919.
3. (and Laney, F. B.). The copper deposits of the Seven Devils and adjacent districts (including Heath, Hornet Creek, Hoodoo, and Deer Creek): Idaho, Bur. Mines and Geology, Bull. no. 1, 105 pp., 13 pls., 11 maps, 1920.
4. A geologic reconnaissance of the Mineral and Cuddy Mountain mining district, Washington and Adams counties, Idaho: Idaho, Bur. Mines and Geology, Pamphlet no. 13, 24 pp., 3 maps [1925?] (mimeographed).
5. Certain topographic features of northeastern Oregon and their relation to faulting: Jour. Geology, vol. 36, no. 8, pp. 694-708, 4 figs., November-December, 1928.

Livingstone, Jennie.

1. Organic constituents of oil shales and related rocks: Colorado, Univ., Studies, vol. 16, no. 2, pp. 149-170, 3 pls., April, 1928.

Lloyd, A. M. See Hammer, 1, 2.

Lloyd, E. Russell. See also Fisher, C. A., 2; Willis, 27.

1. Petroleum in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 2, pp. 969-1169, 10 figs., September 20, 1920.
2. Igneous rocks [of the Hot Springs district, Arkansas]: U. S. Geol. Survey, Geol. Atlas U. S., Hot Springs folio, Arkansas (no. 215), pp. 7-8, 1923.

Lloyd, Stewart J.

1. Relation of oil to carbon ratios (discussion): Econ. Geology, vol. 15, no. 1, pp. 94-96, January-February, 1920.
2. Oil prospecting in Alabama: Alabama Geol. Survey, Leaflet no. 2, 3 pp., map, February, 1920.

Lobeck, Armin Kohl.

1. Block diagrams: Jour. Geography, vol. 19, no. 1, pp. 24-32, 15 figs., January, 1920.
2. A physiographic diagram [map] of the United States. Scale, 1:3,000,000. A. J. Nystrom & Co., Chicago, 1921.
3. Physiographic diagram of the United States (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 71, March 31, 1921.
4. Physiographic diagram of the United States. Small-scale edition. 8 pp., map, 1922.
5. The physiography of Porto Rico: Scientific Survey of Porto Rico and the Virgin Islands, vol. 1, pt. 4, pp. 301-379, 41 figs., map, New York Academy of Sciences, 1922.
6. Block diagrams and other graphic methods used in geology and geography. 206 pp., 287 figs., New York, John Wiley and Sons, 1924.
7. Panorama of physiographic types. 4 pp., 2 charts, Madison, Wisconsin: Wisconsin Geographical Press, 1926.
8. A popular guide to the geology and physiography of Allegany State Park. New York State Mus. Handbook 1, 288 pp., 131 figs., 3 pls. (maps), 1927.
9. Glacial phenomena in and near Allegany State Park, New York (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 141, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 150, March, 1927.

Lobeck, Armin Kohl—Continued.

10. The geology and physiography of the Mammoth Cave National Park: Kentucky Geol. Survey, ser. 6, Pam. 21, 69 pp., 37 figs., 1 pl., 1928.

Locke, Augustus. See also Merwin, 6; Morse, H. W., 1.

1. The profession of ore hunting: Econ. Geology, vol. 16, nos. 4-5, pp. 243-278, 1921.
2. Experiment in ore-hunting geology: Mining and Metallurgy, no. 184, pp. 27-29, 1 fig., April, 1922.
3. Present tendencies in exploration for new mines (with discussion): Am. Inst. Min. and Met. Eng., Trans., vol. 69, pp. 3-21, 10 figs., 1923.
4. (and Hall, D. A., and Short, M. N.). Rôle of secondary enrichment in genesis of Butte chalcocite (with discussion by G. M. Schwartz): Am. Inst. Min. and Met. Eng., Trans., vol. 70, pp. 933-963, 17 figs., 1924; [preprint] no. 1308, 30 pp., 17 figs., March, 1924; abstract, Mining and Metallurgy, vol. 5, no. 210, pp. 292-293, June, 1924.
5. Geology as a guide to ore: Econ. Geology, vol. 20, no. 7, pp. 691-692, November, 1925.
6. Leached outcrops as guides to copper ore. 175 pp., 18 figs., 24 pls., Baltimore, The Williams and Wilkins Company, 1926.
7. The formation of certain ore bodies by mineralization stoping: Econ. Geology, vol. 21, no. 5, pp. 431-453, 15 figs., August, 1926.
8. Ore finding: Mining and Metallurgy, vol. 7, no. 240, pp. 520-523, December, 1926.
9. Primary conceptions in ore geology: Econ. Geology, vol. 22, no. 1, pp. 80-84 January-February, 1927.
10. The geologist's place in the finding of ore: Min. Jour., Phoenix, Ariz., vol. 10, no. 16, pp. 5-6, 60-61, January 15, 1927.
11. The opening as a reason for ore: Econ. Geology, vol. 23, no. 1, pp. 93-98, January, 1928.

Lockett, J. R.

1. Notes on Clinton sandstone in Ohio: Nat. Petroleum News, vol. 16, no. 44 pp. 73, 75, 76, 79, 81, 83, October, 29, 1924.
2. General structure of the producing sands in eastern Ohio: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 10, pp. 1023-1033, 1 fig., October, 1927.

Lockwood, C. D.

1. Oil may exist in southeast Oklahoma: Oil and Gas Jour., vol. 24, no. 30, pp. 51, 104, December 17, 1925.
2. Geology of Panhandle [Texas]: Oil and Gas Jour., vol. 24, no. 43, pp. 30, 152, map, March 18, 1926.

Lodochnikow, W. N.

1. A discussion of N. L. Bowen's paper, "The problem of the anorthosites": Jour. Geology, vol. 33, no. 2, pp. 153-172, 1925.

Leol, Wayne. See Arnold, 3.

Loewinson-Lessing, F.

1. The problem of the anorthosites and other mono-mineral igneous rocks: Jour. Geology, vol. 31, no. 2, pp. 89-105, February-March, 1923.

Logan, Clarence August. See also Boalich, 1.

1. Platinum and allied metals in California: California State Min. Bur., no. 85, 120 pp., 4 pls. (incl. maps), 10 figs., 1919.

Logan, Clarence August—Continued.

2. Notes on the West Point district, Calaveras County: California State Min. Bur., Mining in California, vol. 18, no. 1, pp. 15-21, January, 1922.
3. Copper mining in California: Min. Congress Jour., vol. 12, no. 9, pp. 631, 632, 639, September, 1926.

Logan, William Newton. See also Ries, 5; Moulton, 8.

1. The occurrence of coal in Monroe County: Indiana Acad. Sci., Proc. 1918, pp. 172-176, 2 pls., 1919.
2. Note on occurrence of indianaitite in Monroe County, Indiana: Indiana Acad. Sci., Proc. 1918, pp. 177-182, 3 pls., 1919.
3. A bio-chemical theory of the origin of indianaitite: Science, new ser., vol. 49, p. 197, February 21, 1919.
4. Kaolin of Indiana: Indiana, Dept. of Conservation, Division of Geology, Pub. no. 6, 131 pp., 43 pls., (incl. maps), 1919.
5. Petroleum and natural gas in Indiana; a preliminary report: Indiana, Dept. Conservation, Pub. no. 8, 279 pp., 63 pls. and figs. (incl. maps), 1920.
6. Report of the division of geology: Indiana, Dept. Conservation, 1st Ann. Rept. (reprinted from Year Book), pp. 9-39 [1920].
7. Report of the division of geology: Indiana, Dept. Conservation, 2d Ann. Rept. (reprinted from Year Book), pp. 251-257, 1921.
8. The building stones of Indiana: Indiana, Dept. Conservation, 2d Ann. Rept. (reprinted from Year Book), pp. 257-263, 1921.
9. Cement materials and industries: Indiana, Dept. Conservation, 2d Ann. Rept. (reprinted from Year Book), pp. 263-272, 1921.
10. Economic geology of Indiana. In Handbook of Indiana geology (Indiana, Dept. Conservation, Pub. no. 21), pp. 571-1058, 161 figs. (incl. maps), Indianapolis, 1922.
11. Vanishing of eastern coal seams in Indiana: Pan-Am. Geologist, vol. 37, no. 2, p. 167, March, 1922.
12. Peat deposits of Indiana: Am. Peat Soc., Jour., vol. 16, no. 1, pp. 22-29, January, 1923; Indiana, Dept. Conservation, 4th Ann. Rept., pp. 21-26, 1923.
13. Report of the division of geology: Indiana, Dept. Conservation, 4th Ann. Rept., pp. 8-18, 1923.
14. The geology of McCormick's Creek Canyon: Indiana, Dept. of Conservation, Division of Lands and Waters, Pub. no. 38, pp. 17-19, 1923.
15. Outlines of Indiana geology: Pan-Am. Geologist, vol. 40, no. 2, pp. 111-138, 1 fig., 5 pls. (maps), September, 1923.
16. Report of the division of geology: Indiana, Dept. Conservation, 5th Ann. Rept., pp. 10-17, 1924.
17. Petroleum conservation: Indiana, Dept. Conservation, 5th Ann. Rept., pp. 17-25, 1924.
18. Geological conditions in the oil fields of southwestern Indiana: Indiana, Dept. Conservation, Pub. no. 42, 125 pp., 6 figs., 1924.
19. Refractory clays and shales of Indiana: Am. Ceramic Soc., Jour., vol. 7, no. 3, pp. 201-206, March, 1924.
20. Report of the division of geology: Indiana, Dept. Conservation, 6th Ann. Rept., pp. 10-19, 1925.
21. The conservation of natural gas: Indiana, Dept. Conservation, 6th Ann. Rept., pp. 19-21, 1925.
22. Indiana petroleum conditions in 1924: Am. Inst. Min. and Met. Eng., no. 1447, pp. 112-119, 1 fig., April, 1925.

Logan, William Newton—Continued.

23. The sub-Trenton formations of Indiana: *Indiana Acad. Sci., Proc.*, vol. 34, p. 75-79, 1925.
24. The geology of the deep wells of Indiana: Indiana, Dept. Conservation, Div. Geology, Pub. no. 55, 540 pp., 1926.
25. Stratigraphy of Pennsylvanian and upper Mississippian formations of southwestern Indiana (abstract): *Pan-Am. Geologist*, vol. 45, no. 2, pp. 175-176, March, 1926.
26. Report of the division of geology: Indiana, Dept. Conservation, 7th Ann. Rept., pp. 9-16, 1926.
27. Some features of the Cincinnati arch as shown by geological conditions in an Indiana gas field: *Indiana Acad. Sci., Proc.*, vol. 36, pp. 65-70, 2 figs., 1927.
28. Report of the division of geology: Indiana, Dept. Conservation, 8th Ann. Rept., pp. 13-21, 1927.
29. Report of the division of geology: Indiana, Dept. Conservation, 9th Ann. Rept., pp. 9-18, 1928.

Lombard, R. H. See Merwin, 5.

Long, Eleanor Tatum.

1. Minor faulting in the Cayuga Lake region: *Am. Jour. Sci.*, 5th ser., vol. 3, pp. 229-248, 10 figs., April, 1922.
2. The mouth of preglacial Salmon Creek, New York: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 510-514, 1 fig., December, 1926.

Longfellow, Dwight W.

1. Symmetric disposition of Tertiary mountain systems: *Pan-Am. Geologist*, vol. 50, no. 2, pp. 103-106, 1 fig., September, 1928.

Longwell, Chester Ray. See also Foye, 5; Stille, 1.

1. Geology of the Muddy Mountains, Nevada, with a section to the Grand Wash Cliffs in western Arizona: *Am. Jour. Sci.*, 5th ser., vol. 1, no. 1, pp. 39-62, 5 figs., January, 1921.
2. (and Waters, E. O.). A practical method for determining dip and strike: *Econ. Geology*, vol. 16, no. 6, pp. 405-409, 2 figs., September-October, 1921.
3. The Muddy Mountain overthrust in southeastern Nevada: *Jour. Geology*, vol. 30, no. 1, pp. 63-72, 7 figs., January-February, 1922.
4. (and others). Geology of the Colorado River in southeastern Utah (abstract with discussion by David White): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 122-123, March 31, 1922.
5. Notes on the structure of the Triassic rocks in southern Connecticut: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 223-236, 2 figs., September, 1922.
6. (and Miser, H. D., Moore, R. C., Bryan, Kirk, and Paige, Sidney). Rock formations in the Colorado Plateau of southeastern Utah and northern Arizona: *U. S. Geol. Survey, Prof. Paper* 132, pp. 1-23, 1 fig., 10 pls., July 27, 1923.
7. Kober's theory of orogeny: *Geol. Soc. America, Bull.*, vol. 34, no. 2, pp. 231-241, 9 figs., June 30, 1923.
8. Thrust faults and faults [in error for flaws] in southern Nevada (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 64-65, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 136, March, 1924.
9. Geological significance of isostasy and gravity measurements; a review: *Geog. Rev.*, vol. 15, pp. 123-129, January, 1925.

Longwell, Chester Ray—Continued.

10. Complex structure in the Spring Mountains, Nevada (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 150, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 149, March, 1925.
11. The pre-Triassic unconformity in southern Nevada: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 93-106, 5 figs., August, 1925.
12. Structural studies in southern Nevada and western Arizona: *Geol. Soc. America, Bull.*, vol. 37, no. 4, pp. 551-583, 7 figs., 4 pls., December 30, 1926; abstract, no. 1, p. 165, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 164, March, 1926.
13. Geophysical problems of general interest; a survey of recent literature: *Geog. Rev.*, vol. 17, no. 3, pp. 467-475, July, 1927.
14. Three common types of desert mud cracks: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 136-145, 9 figs., February, 1928.
15. Geology of the Muddy Mountains, Nevada, with a section through the Virgin Range to the Grand Wash Cliffs, Arizona: *U. S. Geol. Survey, Bull.* 798, 152 pp., 9 figs., 17 pls. (incl. map), 1928.
16. Some physical tests of the displacement hypothesis. In *Theory of continental drift*, pp. 145-157, 5 figs., *Am. Assoc. Petroleum Geologists*, 1928.
17. Lessons from the St. Francis dam [California]: *Science*, new ser., vol. 67, pp. 36-37, July 13, 1928.
18. The Triassic of Connecticut: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 259-263, 4 figs., September, 1928.
19. Herschel's view of isostatic adjustment: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 451-453, 1 fig., November, 1928.

Lonsdale, John Tipton. See also Gould, C. N., 11, 15; Palache, 20.

1. Some effects of heat on the properties of minerals: *Am. Mineralogist*, vol. 8, no. 8, pp. 141-147, August, 1923.
2. Post-Cincinnatian granites of northeastern Piedmont Virginia: *Jour. Geology*, vol. 34, no. 2, pp. 159-166, 3 figs. (maps), February-March, 1926.
3. A Piedmont Virginia magmatic complex: *Am. Jour. Sci.*, 5th ser., vol. 11, pp. 505-513, 2 figs., June, 1926.
4. Niter and soda niter from Brewster County, Texas: *Am. Mineralogist*, vol. 11, no. 7, pp. 189-190, July, 1926.
5. The occurrence of caliche in Oklahoma (abstract): *Iowa Acad. Sci., Proc.* 1925, vol. 32, p. 357 [1926].
6. The occurrence of caliche in Oklahoma: *Oklahoma Acad. Sci., Proc.*, vol. 5, 1925 (*Oklahoma, Univ., Bull.*, new ser. no. 330, *Univ. Studies* no. 22), pp. 132-136, April 1, 1926.
7. Geology of the gold-pyrite belt of the northeastern Piedmont, Virginia: *Virginia Geol. Survey, Bull.* 30, 110 pp., 11 figs., 9 pls., 1927.
8. (and Adkins, W. S.). Euhedral orthoclase crystals from Sierra Blanca, Texas: *Am. Mineralogist*, vol. 12, no. 6, pp. 256-259, 1 fig., June, 1927.
9. The Florence meteorite of Williamson County, Texas: *Am. Mineralogist*, vol. 12, no. 11, pp. 398-404, 2 pls., November, 1927.
10. Igneous rocks of the Balcones fault region of Texas: *Texas, Univ., Bull.* no. 2744, 178 pp., 20 figs., 9 pls. (incl. map), November 22, 1927.
11. (and Crawford, David J.). Pseudo-igneous rock and baked shale from the burning of lignite, Freestone County, Texas: *Texas, Univ., Bull.* no. 2801, pp. 147-158, 1 fig., 3 pls., 1928.

Lonsdale, John Tipton—Continued.

12. Analcite from Brewster County, Texas: *Am. Mineralogist*, vol. 13, no. 8, pp. 449–450, August, 1928.

Loomis, Benjamin Franklin.

1. Pictorial history of the Lassen Volcano [California]. 135 pp., 84 figs., map, Anderson, Calif., Anderson Valley News Press [1926].

Loomis, Frederic Brewster. See also Gidley, 9.

1. An amphibian from the Eocene: *Am. Jour. Sci.*, 4th ser., vol. 47, pp. 217–219, 1 fig., March, 1919.
2. Pawnee Creek beds of Colorado (abstract): *Geol. Soc. America, Bull.*, vol. 21, no. 1, p. 224, March 31, 1920.
3. On *Ticholeptus rusticus* and the genera of Oreodontidae: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 281–292, 4 figs., October, 1920.
4. Postglacial faulting about Mount Toby, Massachusetts (with discussion by W. H. Hobbs): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 75–80, 3 figs., March 31, 1921.
5. Origin of South American faunas [including relations to North American faunas]: *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 187–196, March 31, 1921.
6. Lower Miocene at Van Tassel, Wyoming (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 211, March 31, 1922.
7. Upper Pawnee Creek beds (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 211, March 31, 1922.
8. Field book of common rocks and minerals; for identifying the rocks and minerals for the United States and interpreting their origins and meanings. xviii, 278 pp., 73 pls., New York, G. P. Putman's Sons, 1923.
9. Oreodons of the lower Harrison beds: *Am. Jour. Sci.*, 5th ser., vol. 6, pp. 222–228, 5 figs., September, 1923.
10. The oreodonts of the lower Oligocene: *Carnegie Mus., Annals*, vol. 15, nos. 2 and 3, pp. 369–378, 3 figs., 3 pls., July, 1924.
11. Miocene oreodonts in the American Museum: *Am. Mus. Nat. Hist., Bull.*, vol. 51, pp. 1–37, 26 figs., July 10, 1924.
12. Artifacts associated with the remains of a Columbian elephant at Melbourne, Florida: *Am. Jour. Sci.*, 5th ser., vol. 8, pp. 503–508, 2 figs., December, 1924.
13. *Leptauchenia and Cyclopidius*: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 241–249, 4 figs., March, 1925.
14. Dentition of artiodactyls: *Geol. Soc. America, Bull.*, vol. 36, no. 4, pp. 583–604, 20 figs., December 30, 1925; abstract, no. 1, p. 226, March 30, 1925.
15. The evolution of the horse. xvi, 233 pp., 41 figs., 25 pls., Boston, Marshall Jones Company, 1926.
16. Early man in Florida: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 26, no. 3, pp. 260–262, 2 figs., May–June, 1926.
17. A giant tortoise from Florida: *Am. Jour. Sci.*, 5th ser., vol. 13, pp. 435–439, 2 figs., May, 1927.
18. *Poebrotherium*: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 137–142, 3 figs., August, 1928.
19. Phylogeny of the deer: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 531–542, 10 figs., December, 1928.

Loomis, Frederic Brewster—Continued.

20. The evolution of the horse and the elephant. In *Creation by evolution*, edited by Frances Mason, pp. 225-241, 4 figs., New York, the Macmillan Company, 1928.

Loomis, Harve.

1. Occurrence of limestone in northeastern Garvin County, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 1, pp. 54-55, January-February, 1922.
2. The Burket-Seeley pool, Greenwood County, Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 5, pp. 482-487, 3 figs., September-October, 1923.

Lord, Richard C.

1. Origin of the brines of eastern Ohio (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, pp. 175-176, 1928; *Ohio Jour. Sci.*, vol. 8, no. 3, pp. 153-154, May, 1928.

Lorenzana, Louís García.

1. Informe geológico de unos terrenos de los que se han encontrado muestras de amianto: Cuba, Dirección de montes y minas, *Bol. minas*, no. 8, pp. 61-63, 1 fig., August, 1925.

Louderback, George Davis. See also Twenhofel, 16.

1. Preliminary results of a study of the San Francisco Bay sediments (abstract with discussion by E. W. Shaw): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 123-125, March 31, 1920.
2. Age of the scarp-producing faults of the Great Basin (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 127, March 31, 1920.
3. Proceedings of the nineteenth annual meeting of the Cordilleran section, held at Pasadena, California, June 19-22, 1919; *Geol. Soc. America, Bull.*, vol. 31, pp. 191-196, March 31, 1920.
4. Certain marked differential movements in the San Francisco Bay region (abstract with discussion by W. H. Hobbs): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 45, March 31, 1921.
5. Basin range structure in the Great Basin: California, Univ., Dept. Geol. Sci., *Bull.*, vol. 14, no. 10, pp. 329-376, 2 figs., 9 pls., November 8, 1923.
6. Geologic section across the Coast Ranges of California (abstract, with discussion by Robin Willis): *Geol. Soc. America, Bull.*, vol. 35, no. 1, p. 95, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, p. 147, March, 1924.
7. Period of scarp production in the Great Basin: California, Univ., Dept. Geol. Sci., *Bull.*, vol. 15, no. 1, pp. 1-44, 3 figs., 3 pls., May 22, 1924.
8. Morphologic features of the Basin Range displacements in the Great Basin: California, Univ., Dept. Geol. Sciences, *Bull.*, vol. 16, no. 1, pp. 1-42, 9 figs., 6 pls., January 9, 1926.
9. Geologic conditions at the [St. Francis] dam site: Report of the Commission to investigate the causes leading to the failure of the St. Francis dam near Saugus, California, pp. 10-13, California State Printing Office, Sacramento, 1928.
10. Geologic features of Kennett dam site [Sacramento River]: California, Dept. Public Works, Div. Engineering and Irrigation, *Bull. no. 13*, pp. 56-59, 2 pls., California State Printing Office, Sacramento, 1928.
11. The geology of the St. Francis dam site: *Am. Soc. Civil Eng., San Francisco section, [Proc.]*, vol. 24, no. 3, pp. 9-10, June 19, 1928.

- Loughlin, Gerald Francis. See also Bateman, 10; Butler, 4; Emmons, S. F., 1; Heikes, 1; Lindgren, 2; Smith, G. O., 3.
1. Two lamprophyre dikes near Santaquin and Mount Nebo, Utah (U. S. Geol. Survey, Prof. Paper 120, pp. 101-109, 1918) (abstract by R. W. Stone): Washington Acad. Sci., Jour., vol. 9, no. 8, p. 228, April 19, 1919.
 2. Oxidized zinc ores of Leadville, Colorado (U. S. Geol. Survey, Bull. 681, 1918) (abstract): Washington Acad. Sci., Jour., vol. 9, no. 17, p. 529, October 19, 1919.
 3. Rock products and the war (abstract): Geol. Soc. America, Bull., vol. 30, p. 97, March 31, 1919.
 4. Lime in 1917: U. S. Geol. Survey, Mineral Resources, 1917, pt. 2, pp. 583-613, May 13, 1919.
 5. (and Coons, A. T.). Stone in 1917: U. S. Geol. Survey, Mineral Resources, 1917, pt. 2, pp. 615-682, June 20, 1919.
 6. (and Coons, A. T.). Slate in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 2, pp. 267-282, 1 fig., October 23, 1919.
 7. (and Insley, Herbert). Lime in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 2, pp. 815-856, 3 figs., 3 pls., June 7, 1920.
 8. (and Coons, A. T.). Stone in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 2, pp. 1189-1313, 8 figs., 7 pls., October 11, 1920.
 9. (and Berry, E. W., and Cushman, J. A.). Limestones and marls of North Carolina: North Carolina Geol. and Econ. Survey, Bull. no. 28, 211 pp., 3 figs., 17 pls. (incl. maps), 1921.
 10. (and Coons, A. T.). Slate in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 369-375, July 29, 1921.
 11. (and Coons, A. T.). Lime in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 405-418, October 6, 1921.
 12. (and Coons, A. T.). Stone in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 419-455, October 18, 1921.
 13. (and Coons, A. T.). Slate in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 2, pp. 135-143, October 12, 1921.
 14. (and Coons, A. T.). Lime in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 2, pp. 178-188, November 3, 1921.
 15. (and Coons, A. T.). Stone in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 2, pp. 225-262, March 6, 1922.
 16. Magnesium in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 19-20, June 14, 1922.
 17. (and Coons, A. T.). Slate in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 2, pp. 23-30, June 29, 1922.
 18. (and Coons, A. T.). Lime in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 2, pp. 155-168, November 29, 1922.
 19. (and Coons, A. T.). Stone in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 2, pp. 175-213, January 22, 1923.
 20. (and Clark, Martha B.). Mineral resources of the United States in 1922 (preliminary summary): U. S. Geol. Survey, Mineral Resources, 1922, pp. 1A-124A, August 15, 1923.
 21. (and Coons, A. T.). Slate in 1922: U. S. Geol. Survey, Mineral Resources, pt. 2, pp. 165-175, November 6, 1923.
 22. Notes on ground waters: Econ. Geology, vol. 19, no. 1, pp. 62-71, 2 figs., January-February, 1924.
 23. (and Coons, A. T.). Stone in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 2, pp. 261-344, 3 figs., April 10, 1924.

Loughlin, Gerald Francis—Continued.

24. An interesting case of dangerous aggregate; the altered feldspar and causes of its disintegration: *Am. Concrete Inst., Proc.*, vol. 19, pp. 150-153, 1923; *Concrete*, vol. 22, no. 4, pp. 146-147, April, 1923.
25. (and Coons, A. T.). Slate in 1923: *U. S. Geol. Survey, Mineral Resources*, 1923, pt. 2, pp. 49-61, 3 figs., September 25, 1924.
26. (and Coons, A. T.). Stone in 1923: *U. S. Geol. Survey, Mineral Resources*, 1923, pt. 2, pp. 205-234, December 18, 1924.
27. (and Coons, A. T.). Lime in 1923: *U. S. Geol. Survey, Mineral Resources*, 1923, pt. 2, pp. 275-284, December 19, 1924.
28. The mineral resources of the United States in 1922: *U. S. Geol. Survey, Mineral Resources*, 1922, pt. 1, pp. 1A-124A, 1925.
29. (and Coons, A. T.). Slate in 1924: *U. S., Bur. Mines, Mineral Resources U. S.*, 1924, pt. 2, pp. 151-160, December 16, 1925.
30. (and Coons, A. T.). Lime in 1924: *U. S., Bur. Mines, Mineral Resources U. S.*, 1924, pt. 2, pp. 193-230, May 22, 1926.
31. Guides to ore in the Leadville district, Colorado: *U. S. Geol. Survey, Bull.* 779, 37 pp., 4 figs., 7 pls. (incl. map), 1926.
32. Ore at deep levels in the Cripple Creek district, Colorado: *Am. Inst. Min. and Met. Eng., Tech. Pub. no. 13*, 32 pp., 12 figs., August, 1927; *Trans.*, vol. 75, pp. 42-73, 12 figs., 1927; abstract, *Washington Acad. Sci., Jour.*, vol. 17, no. 12, pp. 321-322, June 19, 1927; *Mining and Metallurgy*, vol. 8, no. 248, p. 357, August, 1927.
33. Qualifications of different kinds of natural stone for concrete aggregate: *Am. Concrete Inst., Proc.*, vol. 23, pp. 319-351, 19 figs., 1927.
34. Usefulness of petrology in the selection of limestone: *Rock Products*, vol. 31, no. 6, pp. 50-59, 15 figs., March 17, 1928.

Louis, Herbert.

1. Die Verbreitung von Glacialformen im Westen der Vereinigten Staaten: *Zeitschr. Geomorphologie*, Bd. 2, H. 4, pp. 221-235, Leipzig, 1927.

Lovejoy, Ellis.

1. Notes on fire clays of the northern Appalachian coal basin (with discussion): *Am. Ceramic Soc., Jour.*, vol. 2, no. 5, pp. 374-390, May, 1919.

Loveland, R. P. See Fairbanks, 12.

Lovering, Thomas S.

1. The leaching of iron protores; solution and precipitation of silica in cold water: *Econ. Geology*, vol. 18, no. 6, pp. 523-540, 1 fig., September, 1923.
2. Magmatic chalcopryite, Park County, Montana: *Econ. Geology*, vol. 19, no. 7, pp. 636-640, November, 1924.
3. Metasomatism and linear "force of growing crystals" (discussion): *Econ. Geology*, vol. 21, no. 5, pp. 507-511, August, 1926.
4. Relations between stress, strain, and rupture in structural geology (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 151-152, March 30, 1927.
5. Organic precipitation of metallic copper: *U. S. Geol. Survey, Bull.* 795, pp. 45-52, June 18, 1927.
6. Williams thrust fault (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 173-174, March 30, 1928.

Lovering, Thomas S.—Continued.

7. Geology of the Moffat Tunnel, Colorado: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 76, pp. 337–346, 1928; abstract, *Washington Acad. Sci., Jour.*, vol. 18, no. 9, p. 264, May 4, 1928.
8. The fracturing of incompetent beds: *Jour. Geology*, vol. 36, no. 8, pp. 709–717, 3 figs., November–December, 1928.

Low, A. P.

1. The east coast of Hudson Bay: *Canadian Min. Jour.*, vol. 49, no. 36, pp. 712–727, no. 37, pp. 736–739, 5 figs., map, September 7 and 14, 1928.

Lowe, Ephraim Noble. See also Ries, 5.

1. Sixth biennial report, 1916–1917, of the director of the [Mississippi] State Geological Survey . . . 12 pp. [1918].
2. Mississippi, its geology, geography, soil, and mineral resources (a revision, with additions, of Bulletin no. 12): Mississippi State Geol. Survey, Bull. no. 14, 346 pp., 20 figs., map, 1919.
3. Oil and gas prospecting in Mississippi: Mississippi State Geol. Survey, Bull. no. 15, 80 pp., 1 pl., 1 fig., 1 map, 1919.
4. Road-making materials of Mississippi: Mississippi State Geol. Survey, Bull. no. 16, 139 pp., 1 fig., March, 1920.
5. Seventh biennial report, 1918–1919, of the director of the State geological survey to the Mississippi legislature. 12 pp., Jackson, Miss. [1920?].
6. Eighth biennial report, 1920–1921, of the director of the State geological survey to the Mississippi legislature. 48 pp. [1921?].
7. Present status of oil and gas prospects in Mississippi: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 4, pp. 490–496, July–August, 1921.
8. Ninth biennial report, 1921–1923, of the director of the State Geological Survey to the Mississippi Legislature, pp. 3–14 [1923].
9. (and others). Petroleum prospecting in Mississippi: Ninth Biennial Report, 1921–1923, of the director of the State Geological Survey to the Mississippi Legislature, pp. 15–190, 1 fig. (sketch map) [1923].
10. A questionnaire on the mineral resources of Mississippi and the work of the State Geological Survey: Mississippi State Geol. Survey, Bull. no. 18, 32 pp., March, 1923.
11. Mineral resources of Mississippi: *The South's Development, Manufacturers Record*, vol. 86, no. 24, pt. 2, pp. 389–390, December 11, 1924.
12. Geology and mineral resources of Mississippi: Mississippi State Geol. Survey, Bull. no. 20, 140 pp., 10 figs., 1925.
13. Stratigraphy of Mississippi (abstract): *Pan-Am. Geologist*, vol. 49, no. 3, pp. 237–238, April, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 274, March 30, 1928.

Lucas, Anthony Francis, 1855–1921.

1. Possible existence of deep-seated oil deposits on Gulf coast (with discussion by G. S. Rogers): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 61, pp. 501–519, 5 figs., 1920.
2. Urgency for deeper drilling on the Gulf coast: *Mining and Metallurgy*, no. 164, pp. 26–27, August, 1920 (abstract); *Am. Inst. Min. and Met. Eng., Trans.* [preprint no. 1004], 5 pp., 1 fig., 1920; discussion, no. 1038, pp. 44–48, January, 1921.

Lucas, Frederic Augustus, 1852–1929.

1. Animals of the past; an account of some of the creatures of the ancient world. Sixth and revised edition, 207 pp., illus., *Am. Mus. Nat. Hist., Handbook series no. 4*, New York, 1922.

Lucke, P. K.

1. The relation of sulphides to water level in Mexico: Am. Inst. Min. and Met. Eng., Trans., vol. 61, pp. 143-146, 3 figs., 1920.

Ludlum, Albert Claude, 1867-1928.

1. Chester Wells Purington: Mining and Metallurgy, vol. 4, no. 203, pp. 578-579, portr., November, 1923; Am. Inst. Min. and Met. Eng., Trans., vol. 70, pp. 1235-1237, portr., 1924.

Lütgens, Rudolf.

1. Geographische und geologische Beobachtungen in Nordwest-Haiti: Geog. Gesell. in Hamburg, Mitt., Bd. 32, pp. 41-90, 10 figs., 4 pls. (incl. map), 1919.

Lugn, Alvin Leonard.

1. A theory of origin of some limestone masses and septaria: Iowa, Univ., Studies, new ser., no. 104, Studies in Natural History, vol. 11, no. 8, pp. 19-22, 3 figs., March 1, 1926.
2. Methods of collecting sediment samples from the Mississippi River: Iowa, Univ., Studies, new ser., no. 104, Studies in Natural History, vol. 11, no. 8, pp. 23-31, 2 pls., March 1, 1926.
3. Some large glacial boulders in Des Moines County, Iowa: Iowa Acad. Sci., Proc., vol. 32, pp. 345-350, 7 figs. [1926].
4. The Mississippian-Pennsylvanian and Pennsylvanian-Pleistocene unconformities in Lucas County, Iowa: Iowa Acad. Sci., Proc., 1925, vol. 32, pp. 351-356, 2 figs. [1926].
5. Observed origin of some mud pebbles (abstract): Pan-Am. Geologist, vol. 46, no. 5, pp. 403-404, December, 1926.
6. Geology of Lucas County: Iowa Geol. Survey, vol. 32, pp. 101-237, 33 figs., 2 pls., map, 1927.
7. Sedimentation in the Mississippi River between Davenport, Iowa, and Cairo, Illinois: Augustana Library Pub., no. 11, 104 pp., 2 figs., 24 pls., 1927.
8. Some observations on undertow: Iowa Acad. Sci., Proc., 1926, vol. 33, pp. 199-201 [1927].
9. An observed origin of some mud pebbles: Iowa Acad. Sci., Proc., 1927, vol. 34, pp. 249-251, 3 figs. [1928].
10. Discussion of a sample of cobble gravel from the Mississippi River: Iowa Acad. Sci., Proc., 1927, pp. 253-256, 2 figs. [1928].

Lull, Richard Swann.

1. Samuel Wendell Williston: Am. Jour. Sci., 4th ser., vol. 47, pp. 220-224, March, 1919.
2. The sauropod dinosaur *Barosaurus* Marsh; redescription of the type specimens in the Peabody Museum, Yale University: Connecticut Acad. Arts and Sci., Mem., vol. 6, 42 pp., 7 pls., 10 figs., December, 1919.
3. Tertiary artiodactyls from the Marsh collection (abstract): Geol. Soc. America, Bull., vol. 21, no. 1, p. 224, March 31, 1920.
4. New Tertiary artiodactyls: Am. Jour. Sci., 4th ser., vol. 50, pp. 83-130, 25 figs., 1 pl., August, 1920.
5. An upper Carboniferous footprint from Attleboro, Massachusetts: Am. Jour. Sci., 4th ser., vol. 50, pp. 234-236, 1 fig., September, 1920.
6. The Cretaceous armored dinosaur, *Nodosaurus textilis* Marsh: Am. Jour. Sci., 5th ser., vol. 1, no. 2, pp. 97-126, 7 figs., 4 pls., February 1921.

Lull, Richard Swann—Continued.

7. New camels in the Marsh collection: *Am. Jour. Sci.*, 5th ser., vol. 1, pp. 392–404, 5 figs., May, 1921.
8. Fauna of the Dallas sand pits [Texas]: *Am. Jour. Sci.*, 5th ser., vol. 2, pp. 159–176, 5 figs., September, 1921.
9. The antiquity of man. *In* *The evolution of man*, edited by G. A. Baitsell, pp. 1–38, 10 figs., New Haven, 1922.
10. Restoration of *Blastomeryx marshi*: *Am. Jour. Sci.*, 5th ser., vol. 3, pp. 159–161, 2 figs., March, 1922. Abstract, *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 211, March 31, 1922.
11. Supposed labyrinthodont footprints from the Maryland Carboniferous (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 211, March 31, 1922.
12. Primitive Pecora in Yale Museum: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 111–119, 1 fig., August, 1922.
13. Variations or specific distinctions; which?: *Geol. Soc. America, Bull.*, vol. 33, no. 3, pp. 599–604, September 30, 1922.
14. Biographical memoir Samuel Wendell Williston, 1852–1918: *Nat. Acad. Sci., Mem.*, vol. 17, pp. 113–141, portr., 1924.
15. Dinosaurian climatic response. *In* *Organic adaptation to environment*, pp. 225–279, 13 figs., 1 pl., New Haven, Yale University Press, 1924.
16. Probable reptilian footprints from the Maryland Carboniferous: *West Virginia Geol. Survey, Mineral and Grant counties*, pp. 731–734: 6 pls., 1924.
17. *The ways of life*. 365 pp., 24 figs., New York, Harper & Brothers, 1925.
18. Early fossil hunting in the Rocky Mountains: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 26, no. 5, pp. 455–462, 5 figs., September–October, 1926.
19. A new footprint locality [North Branford, Connecticut]: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 48–49, 1 fig., July, 1927.
20. *Ancient man*. 152 pp., 7 figs., New York, Doubleday, Doran & Company, 1928.
21. Connecting and missing links in the ascent to man. *In* *Creation by evolution*, edited by Frances Mason, pp. 255–269, New York, The Macmillan Company, 1928.

Lunt, Horace Fletcher.

1. (and others). The oil shales of northwestern Colorado: *Colorado, Bur. Mines, Bull.* no. 8, 59 pp., 3 pls., 5 figs., 1919.
2. Ore deposition at Creede, Colorado: *Eng. and Min Jour.-Press*, vol. 117, no. 24, p. 973, June 14, 1924.

Lupton, Charles T. See also Stone, 11.

1. (and Lee, Wallace). Geology of the Cat Creek oil fields, Fergus and Garfield counties, Montana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 2, pp. 252–275, 2 figs., 1 pl. (with discussion by F. H. Lahee and Mowry Bates, pp. 327–328), March–April, 1921.
2. (and Lee, Wallace, and Van Burgh, L. R.). Oil possibilities of western Kansas (with discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 2, pp. 69–90, 5 figs., 1 pl., March–April, 1922.
3. Geologic section in western Kansas [boring, Gove County]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 6, pp. 549–551, November–December, 1922.

Lupton, Charles T.—Continued.

4. Results and prospects of deeper drilling in the Rocky Mountain fields: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 4, pp. 400-410, July-August, 1923.
5. (and Marks, E. M.). Oil possibilities in South Dakota west of the Missouri River: Oil and Gas Jour., vol. 23, no. 5, pp. 78, 80, 82, 84, June 26, 1924.
6. Areal and structural geologic map of Otero County, Colorado. Scale $\frac{1}{2}$ inch=1 mile. 1926. Engraved and printed by the Clason Map Co., Denver.

Luquer, Lea McIlvaine.

1. Alfred J. Moses: Am. Mineralogist, vol. 5, no. 6, pp. 109-112, June, 1920.

Lusk, Ralph Gordon, 1897-1927. See also Mather, 9, 12.

1. A pre-Chattanooga sink hole [Gainsboro quadrangle, Tennessee]: Science, new ser., vol. 65, pp. 579-580, June 10, 1927.
2. The significance of structure in the accumulation of oil in Tennessee: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 9, pp. 905-917, 3 figs., September, 1927.
3. Gravel on the Highland Rim Plateau, and terraces in the valley of Cumberland River: Jour. Geology, vol. 36, no. 2, pp. 164-170, 1 fig., February-March, 1928.

Lyder, E. E. See Allen, H. C., 1.

Lyman, Frank.

1. Benjamin Smith Lyman: Mining and Metallurgy, no. 170, pp. 23-24, February, 1921.

Lynch, F. C. C.

1. Asbestos, a Canadian specialty: Min. and Sci. Press, vol. 120, pp. 531-533, 4 figs., April 10, 1920.

Lyon, Marcus Ward, jr.

1. *Goniobasis livescens* Menke, a Pleistocene shell in Furnessville Blowout, dunes of Porter County: Indiana Acad. Sci., Proc. 38th Ann. Meeting, 1922, pp. 123-124, 1 fig., 1923.

Mabery, Charles Frederic, 1850-1927.

1. The genesis of petroleum as shown by its nitrogen constituents (abstract): Science, new ser., vol. 49, pp. 549-550, June 6, 1919.

McArthur, D. C.

1. Nonmetallic mineral deposits of Manitoba: Canadian Inst. Min. and Met., Monthly Bull. no. 105, pp. 15-16, January, 1921.

Macaulay, R. M.

1. The source of placer platinum in the Tulameen district of British Columbia: Eng. and Min. Jour., vol. 107, pp. 303-306, 1 fig., February 15, 1919.

McBeth, Reid Sayers.

1. Pioneering the Gulf coast; a story of the life and accomplishments of Capt. Anthony F. Lucas. 80 pp., illus. [New York, 1918].
2. Oil, the new monarch of motion . . . 210 pp., illus., New York, Markets Publishing Corp., 1919.

Mac Boyle, Errol.

1. Mines and mineral resources of Nevada County: Chapters of State Mineralogist's Report, Biennial Period 1917-18, 270 pp., 4 pls., 32 figs., California State Min. Bur., 1919.
2. Mines and mineral resources of Plumas County: Chapters of State Mineralogist's Report, Biennial Period 1917-18, 188 pp., 1 pl., 11 figs., California State Min. Bur., 1920.
3. Mines and mineral resources of Sierra County: Chapters of State Mineralogist's Report, Biennial Period 1917-18, 144 pp., 3 pls., 18 figs., California State Min. Bur., 1920.

McBride, Russell Smith.

1. (and Sievers, E. G.). Natural gas in 1919-1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 2, pp. 335-369, 13 figs., May 22, 1923.

Macbride, Thomas Huston.

1. Section of late Tertiary and Quaternary marls near DeLand, Florida (abstract): Pan-Am. Geologist, vol. 42, no. 5, p. 382, December, 1924; Iowa Acad. Sci., Proc., vol. 31, p. 334 [1926?].

McCabe, Joseph.

1. Ice ages; the story of the earth's revolutions. 134 pp., 4 pls., New York, G. P. Putnam's Sons, 1922.

McCabe, R. E.

1. The minor oil fields of Kern County; Lost Hills oil field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 10, no. 1, pp. 5-10, 2 pls. (incl. map), July, 1924.

McCallie, Samuel Washington. See also LaForge, 4.

1. Notes on the geology of Georgia: Jour. Geology, vol. 27, no. 3, pp. 165-179, 4 figs. (incl. map), April-May, 1919.
2. Notes on the geology of Georgia: Georgia, Geol. Survey, Bull. no. 39, pp. 72-85, 1 fig. (map), 1922.
3. The Pitts meteorite [Wilcox County, Georgia]: Am. Jour. Sci., 5th ser., vol. 3, pp. 211-215, 1 fig., March, 1922. Georgia, Geol. Survey, Bull. no. 39, pp. 141-149, 1 pl., 1 fig., 1922.
4. The mineral resources of Georgia: The South's Development, Manufacturers Record, vol. 86, no. 24, pt. 2, pp. 369-373, 3 figs., December 11, 1924.
5. A preliminary report on the mineral resources of Georgia; revised edition: Georgia, Geol. Survey, Bull. no. 23, 164 pp., 1 fig., 22 pls. (incl. map), 1926.
6. Notes on the Social Circle meteorite [Georgia]: Am. Jour. Sci., 5th ser., vol. 13, p. 360, April, 1927.
7. Georgian coastal plains terranes: Pan-Am. Geologist, vol. 49, no. 3, pp. 167-178, April, 1928.
8. Mesozoic and Cenozoic formations of Georgia (abstract): Pan-Am. Geologist, vol. 49, no. 3, p. 235, April, 1928.

McCann, William Sidney.

1. The Maskwa River copper-nickel deposit, southeastern Manitoba: Canada, Geol. Survey, Summ. Rept., 1920, pt. C, pp. 19-29, 3 figs., map, 1921.
2. Possibilities of finding oil or natural gas at Edmunston, New Brunswick: Canada, Geol. Survey, Summ. Rept., 1921, pt. D, pp. 97-99, 1921.
3. Geology and mineral deposits of the Bridge River map area, British Columbia: Canada, Geol. Survey, Mem. 130, 115 pp., 11 figs., 11 pls., 2 maps, 1922.

McCann, William Sidney—Continued.

4. The gold quartz veins of Bridge River district, British Columbia, and their relationship to similar ore deposits in the western Cordilleras: *Econ. Geology*, vol. 17, no. 5, pp. 350-369, 4 figs., August, 1922.

MacCarthy, Gerald R.

1. Mud cracks on steeply inclined surfaces: *Jour. Geology*, vol. 30, no. 8, p. 702, November-December, 1922.
2. Some facts and theories concerning laccoliths: *Jour. Geology*, vol. 33, no. 1, pp. 1-18, 7 figs., January-February, 1925.
3. Iron coloration in rocks and minerals: *Elisha Mitchell Sci. Soc., Jour.*, vol. 41, nos. 1-2, pp. 135-137, September, 1925.
4. Iron-stained sands and clays: *Jour. Geology*, vol. 34, no. 4, pp. 352-360, May-June, 1926.
5. Colors produced by iron in minerals and the sediments: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 17-36, July, 1926.
6. The green color of certain ferrous minerals: *Am. Mineralogist*, vol. 11, no. 12, pp. 321-325, December, 1926.
7. Experiments in underthrusting: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 51-67, 9 figs., July, 1928; abstract, *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 172, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 77, February, 1928.
8. The origin of folded mountains (abstract): *Elisha Mitchell Sci. Soc., Jour.*, vol. 44, no. 1, pp. 14-15, September, 1928.

McCartney, G. C. See Wallace, 23.

McCaskey, Hiram Dryer. See also Bastin, 3.

1. (and others). Our mineral supplies: *U. S. Geol. Survey, Bull.* 666, 278 pp., 6 figs., 1 pl., 1919.

MacCaughey, Vaughan.

1. Activity of Kilauea Volcano [Hawaii]: *Science*, new ser., vol. 49, pp. 188-189, February 21, 1919.

MacCaughey, William John.

1. Note on the Becke reaction: *Am. Mineralogist*, vol. 5, no. 7, p. 134, July, 1920.
2. Mineralogical examination of coal formation clays: *Ohio Geol. Survey*, 4th ser., *Bull.* 26, pp. 516-522, 1923.

McClellan, H. W.

1. Laumontite from southern Oregon: *Am. Mineralogist*, vol. 11, no. 10, pp. 287-288, October, 1926.

MacClintock, Paul.

1. The Pleistocene history of the lower Wisconsin River: *Jour. Geology*, vol. 30, no. 8, pp. 673-689, 5 figs., November-December, 1922.
2. The breaking of waves in shallow water: *Jour. Geology*, vol. 32, no. 5, pp. 407-409, 3 figs., July-August, 1924.
3. Pre-Illinoian till in southern Illinois: *Jour. Geology*, vol. 34, no. 2, pp. 175-180, 4 figs., February-March, 1926; *Illinois State Geol. Survey Rept. Investigations*, no. 11, pp. 10-15, 4 figs., 1926.

McClung, C. E.

1. *Martinichthys*, a new genus of Cretaceous fish from Kansas, with descriptions of six new species: *Am. Philos. Soc., Proc.*, vol. 65, no. 5, suppl., pp. 20-26, 2 pls., 1926.

McCollom, C. R. See Templeton, 1.

McComb, H. E.

1. An investigation of the Milne-Shaw seismograph: *Seismol. Soc. America, Bull.*, vol. 12, no. 4, pp. 220-226, 1 fig., December, 1922.

McConnell, R. G.

1. Sault Ste. Marie area, District of Algoma: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 2, pp. 1-52, 9 figs., map, 1927.

McCormack, John T. See also Romer, 10.

1. Experiments on the dehydration of gypsum: *Jour. Geology*, vol. 34, no. 5, pp. 429-433, July-August, 1926.

McCornack, Ellen Condon.

1. Contributions to the Pleistocene history of Oregon, Univ., Leaflet series, *Geology Bull.*, vol. 6, no. 3, pt. 2, 23 pp., 2 figs., October, 1920.
2. Thomas Condon, pioneer geologist of Oregon (with Foreword by Henry Fairfield Osborn). xv, 355 pp., illus., Eugene, Oregon, University Press, 1928.

McCoy, Alexander Watts. See also Washburne, 2.

1. Notes on principles of oil accumulation: *Jour. Geology*, vol. 27, no. 4, pp. 252-262, 6 figs., May-June, 1919.
2. Reply to discussion by C. W. Washburne on "Notes on principles of oil accumulation"; *Jour. Geology*, vol. 28, no. 4, pp. 371-373, May-June, 1920.
3. Experimental studies of subsurface relations in oil and gas fields (discussion): *Econ. Geology*, vol. 15, no. 8, pp. 680-682, December, 1920.
4. Experimental petroleum geology: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 4, pp. 466-468, July-August, 1921.
5. A short sketch of the paleogeography and historical geology of the Mid-Continent oil district and its importance to petroleum geology: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, pp. 102-103 (abstract), no. 5, pp. 541-584, 1 fig., 10 pls., September-October, 1921.
6. Soluble material in oil shale: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 6, p. 1025, September, 1925.
7. A brief outline of some oil-accumulation problems: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 11, pp. 1015-1034, 1 fig., November, 1926.

McCrea, Charles.

1. Willet Green Miller: *Canadian Min. Jour.*, vol. 47, no. 47, pp. 1107-1110, 2 figs., November 19, 1926.

MacCurdy, George Grant.

1. Human origins; a manual of prehistory; volume I, the old stone age and the dawn of man and his arts. 440 pp., 254 figs., New York, D. Appleton and Company, 1924.

MacCurdy, H. M.

1. Mastodon remains found in Gratiot County, Michigan: *Michigan Acad. Sci.*, 21st. Ann. Rept., pp. 109-110, 1920.

McDermid, A. J.

1. Ore deposits of Gold Hill mine, at Quartzburg, Idaho: *Eng. and Min. Jour.-Press*, vol. 114, no. 13, pp. 537-540, 6 figs., September 23, 1922.

MacDonald, Donald Francis.

1. Contributions to the geology and paleontology of the Canal Zone, Panama, and geologically related areas in Central America and the West Indies; the sedimentary formation of the Panama Canal Zone, with special reference to the stratigraphic relations of the fossiliferous beds: U. S. Nat. Mus., Bull. 103, pp. 525-545, 2 pls. (maps), 2 figs., 1919.
2. (and others). Notes on the stratigraphy of Panama and Costa Rica: Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 363-366, 1919.
3. Some factors of Central American geology that may have a bearing on the origin of petroleum: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 3, pp. 263-268, 2 figs., 1920.
4. (and others). Informe final geológico y geográfico de Costa Rica: Revista de Costa Rica (San Jose, Costa Rica), año 2, no. 1, pp. 28-32, September; no. 2, pp. 50-57, October; no. 4, pp. 106-111, December, 1927; no. 5, pp. 139-148, January, 1921.
5. The geology of the Panama Canal with special reference to the slides: Nat. Acad. Sci., Mem., vol. 18, pp. 45-67, 1924.

McDonald, O. G. See Merritt, 4.

McDonald, Worth W.

1. The Cotton Valley, Louisiana, oil field: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 5, pp. 875-885, 1 fig., August, 1925.

Macelwane, James B. See also American Geophysical Union, 1; Bowie, 24; Rogers, A. F., 23.

1. Some seismological evidence that is not evident: Science, new ser., vol. 56, pp. 478-480, October 27, 1922.
2. The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1921, to September 30, 1921: California, Univ., Pub., Seismographic Stations, Bull., vol. 2, no. 2, pp. 17-27, November 8, 1922.
3. A study of the relation between the periods of elastic waves and the distance traveled by them, based upon the seismographic records of the California earthquake, January 31, 1922: Seismol. Soc. America, Bull., vol. 13, no. 2, pp. 14-69, 6 figs., 1 pl., June, 1923.
4. The Corralitos [California] earthquake, September 19, 1923: Seismol. Soc. America, Bull., vol. 13, no. 3, pp. 109-112, 1 pl., September, 1923.
5. Eureka earthquake, January 31, 1922 (abstract): Geol. Soc. America, Bull., vol. 35 no. 1, p. 165, March 30, 1924.
6. The interior of the earth: Seismol. Soc. America, Bull., vol. 14, no. 2, pp. 81-89, 2 figs., June, 1924.
7. (and Byerly, Perry, jr.). The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1921, to March 31, 1922: California, Univ., Seismographic Stations, Bull., vol. 2, no. 3, pp. 29-54, March 15, 1924.
8. (and Byerly, Perry, jr.). The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1922, to September 30, 1922: California, Univ., Seismographic Stations, Bull., vol. 2, no. 4, pp. 55-56, October 13, 1924.
9. Recent seismic activity in central California (abstract with discussion by Warren D. Smith): Geol. Soc. America, Bull. vol. 36, no. 1, pp. 203-204, March 30, 1925.

Macelwane, James B.—Continued.

10. New evidence for a sharply bounded and very rigid core in the earth (abstract): *Physical Rev.*, 2d ser., vol. 25, no. 5, p. 721, May, 1925.
11. (and Appleford, William L.). The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1922, to March 31, 1923: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 5, pp. 67–87, July 30, 1925.
12. The earthquake of January 22, 1923 [western North America]: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 5, pp. 88–90, July 30, 1925.
13. (and Appleford, William L.). The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1923, to September 30, 1923: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 6, pp. 91–105, December 31, 1925.
14. (and Byerly, Perry). The registration of earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1923, to March 31, 1924: *California, Univ., Seismographic Stations, Bull.*, vol. 2, no. 7, pp. 107–119, December 31, 1925.
15. Are important earthquakes ever caused by impact?: *Seismological Soc. America, Bull.*, vol. 16, no. 1, pp. 15–18, March, 1926; abstract, *Pan-Am. Geologist*, vol. 45, no. 3, p. 253, April, 1926.
16. Evidence furnished by the earthquake of June 26, 1924, for a sharply bounded and very rigid core in the earth (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 209–210, March 30, 1926.
17. The Jesuit seismographic stations in the United States and Canada—a retrospect: *Seismological Soc. America, Bull.*, vol. 16, no. 3, pp. 187–193, September, 1926.
18. New seismological tables: *Nat. Research Council, Bull.*, no. 56 (vol. 11, pt. 2), pp. 65–69, November, 1926.
19. (and Repetti, William C.). The Crystal Springs, California, earthquake of February 10, 1925: *Seismological Soc. America, Bull.*, vol. 17, no. 1, pp. 15–19, 1 fig., March, 1927; abstract, *Pan-Am. Geologist*, vol. 47, no. 4, p. 316, May, 1927.
20. (and Repetti, William C.). The Calaveras Valley, California, earthquake of April 3, 1924: *Seismological Soc. America, Bull.*, vol. 17, no. 1, pp. 20–24, 1 fig., March, 1927; abstract, *Pan-Am. Geologist*, vol. 47, no. 4, p. 316, May, 1927.
21. Reports of progress in seismological work in the United States; B, Jesuit Seismological Association: *Nat. Research Council, Bull.* no. 61, pp. 74–77, July, 1927.
22. Some new wave groups observed on the records of the south Pacific earthquake of June 26, 1924: *Nat. Research Council, Bull.* 61, pp. 90–91, July, 1927.

McEvoy, James.

1. Smoky River coal field; examination and comparison with the Kananaskis area: *Canada, Dominion Fuel Board [Pub.] no. 7, Geol. Survey [Pub.] no. 2055*, 15 pp., 3 figs., 5 pls. [1925].

McEwan, Eula Davis.

1. A study of the brachiopod genus *Platystrophia*: *U. S. Nat. Mus., Proc.*, vol. 56, pp. 383–448, 11 pls., 1919. Review by F. A. Bather, *Geol. Mag.*, vol. 57, pp. 88–90, February, 1920.
2. The Ordovician of Madison, Indiana: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 154–158, August, 1920.

McFarlan, Arthur Crane. See also Glenn, 11; Kentucky G. S., 42.

1. The bryozoan faunas of the Chester series of Illinois and Kentucky (abstract): Chicago Univ., Abstracts of Theses, Sci. Ser., vol. 2, pp. 223-227, September, 1926.
2. (and others). Map of the areal and structural geology of Garrard County, Kentucky: Kentucky Geol. Survey, Ser. 1927. Scale 1 inch=1 mile.
3. The West Hickman fault zone of Jessamine and Fayette counties, Kentucky (abstract): Kentucky Acad. Sci., Trans., vol. 2, pp. 214-216, 2 figs., 1927.
4. The base of the "Big Lime" as a key horizon for structural work in northeastern Kentucky (abstract): Kentucky Acad. Sci., Trans., vol. 2, pp. 216-217, 1927.

McFarland, R. S.

1. Stroud oil field, Oklahoma: Mining and Metallurgy, vol. 5, no. 211, pp. 334-335, 1 fig., July, 1924.

Macfarlane, John Muirhead.

1. The evolution and distribution of fishes. 564 pp., 72 figs., New York, The Macmillan Company, 1923.
2. Fishes the sources of petroleum. 451 pp., 51 figs., New York, The Macmillan Company, 1923.

McGill, William M.

1. Gold and silver mining in Ontario: Colorado School of Mines, Alumni Mag., vol. 14, no. 5, pp. 10-16, September, no. 6, pp. 12-18, October, 1924.

McGonigle, Fritz. See Thomson, F. A., 6.

McGraw, Evans. See Kentucky G. S., 28, 44, 50.

Macgregor, Alexander Miers.

1. The origin of sedimentary iron ores: Econ. Geology, vol. 20, no. 2, pp. 195-197, March-April, 1925.

MacGregor, J. G.

1. Structural features of certain Rouyn ore-bodies: Canadian Min. Jour., vol. 49, no. 23, pp. 456-460, 8 figs., June 8, 1928; Min. Mag., vol. 39, no. 2, pp. 117-120, 4 figs., August, 1928.

McGuigan, F. H. See also Melton, 7.

Machamer, G. W. See Van Tuyl, 5.

Machatschki, Felix. See also Gaertner, 1.

1. Enstatit-Hornblendit von Grönland: Centralbl. Mineralogie, Abt. A, no. 5, pp. 172-175, 1 fig., 1927.

McInnes, William, 1858-1925.

1. Report of the directing geologist: Canada, Geol. Survey, Summ. Rept., 1917, pt. A, pp. 1-14, 1919.
2. Report of the directing geologist: Canada, Geol. Survey, Summ. Rept., 1918, pt. A, pp. 1-14, 1919.
3. Report of the director: Canada, Geol. Survey, Summ. Rept., 1919, pt. A, pp. 1-15, 1921.

McIntosh, D. S.

1. Notes on an esker in the interior of Digby County, Nova Scotia: Nova Scotian Inst. Sci., Proc. and Trans., vol. 16, pp. 139-141, November 21, 1927.

MacKay, Bertram Reid. See also Wilson, M. E., 2.

1. Cariboo gold fields, British Columbia: Canada, Geol. Survey, Summ. Rept., 1918, pt. B, pp. 39-56, 3 figs., 1 pl., 1919.
2. Placer operations in Cariboo area of British Columbia: Eng. and Min. Jour., vol. 107, pp. 1035-1041, 1 fig., June 14, 1919.
3. Cariboo district, B. C.: Canada, Geol. Survey, Summ. Rept., 1919, pt. B, pp. 36-37, 1920.
4. Beauceville map-area, Quebec: Canada, Geol. Survey, Mem. 127, 105 pp., 7 figs., 13 pls., 2 maps, 1921.
5. Hat Creek coal deposit, Kamloops district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 164-181, 3 figs., 1926.

McKay, Guy R.

1. Park City, a lead-silver district in Utah: Eng. and Min. Jour.-Press, vol. 116, no. 1, pp. 7-14, 8 figs., July 7, 1923.

McKee, J. P. See also Tomlinson, 4.

McKee, Ralph Harper.

1. (and others). Shale oil. 326 pp., 35 figs., American Chemical Society Monograph series, New York, The Chemical Catalog Company, 1925.

McKeehan, L. W. See Kovarik, 1501.

McKelvey, Samuel Robert.

1. The Dinosauria. 20 pp., 7 figs., Denver, The Research Company, 1920.

Mackenzie, George Cleghorn.

1. An investigation of certain Canadian platinum and manganese resources: Canadian Min. Inst., Trans., vol. 22, pp. 305-319, 3 figs. [1920].
2. (and Corless, C. V.). Willet G. Miller: Canadian Inst. Min. and Met., Bull., no. 155, pp. 178-181, portr., March, 1925.

MacKenzie, John David, 1888-1922.

1. The limonite deposits in Taseko Valley, British Columbia: Canada, Geol. Survey, Summ. Rept., 1920, pt. A, pp. 42-70, 2 figs., 8 maps, 1921.
2. A reconnaissance between Taseko Lake and Fraser River, British Columbia: Canada, Geol. Survey, Summ. Rept., 1920, pt. A, pp. 70-81, 2 figs., map, 1921.
3. Copper deposits on Lasqueti Island, British Columbia: Canada, Geol. Survey, Summ. Rept., 1921, pt. A, pp. 50-58, 2 figs., 1922.
4. The historical and structural geology of the southernmost Rocky Mountains of Canada: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 16, sec. 4, pp. 97-132, 3 figs., 1922.
5. The coal measures of Cumberland and vicinity, Vancouver Island: Canadian Inst. Min. and Met., Monthly Bull. no. 122, pp. 667-693, 13 figs., June, 1922; Trans., vol. 25, pp. 382-411, 13 figs., [1923].
6. Description of clastic sediments (discussion): Econ. Geology, vol. 18, no. 2, pp. 194-195, March, 1923.
7. Alberni area, Vancouver Island, British Columbia: Canada, Geol. Survey, Summ. Rept., 1922, pt. A, pp. 61-67, map, 1923.

McKenzie, Norman.

1. Annual report on the mines, 1926: Nova Scotia, Dept. Public Works and Mines, 424 pp., Halifax, N. S., 1927. Includes reports on gold fields of Nova Scotia by T. A. Rickard, J. C. Murray, and E. R. Faribault.

McKenzie, Norman—Continued.

2. Report on the mines of Nova Scotia, 1927: Nova Scotia, Dept. Public Works and Mines, 2 pts., 756 pp., Halifax, 1928.

McKinstry, Hugh E. See also Warren, C. H., 2.

1. The Poorhouse quarry, Chester County, Pennsylvania: *Am. Mineralogist*, vol. 5, no. 6, pp. 121-122, June, 1920.
2. The minerals of Rockport, Massachusetts: *Am. Mineralogist*, vol. 6, no. 3, pp. 56-60, March, 1921.
3. The Unionville, Pennsylvania, corundum mines: *Am. Mineralogist*, vol. 6, no. 9, pp. 135-137, September, 1921.
4. A protractor for plotting dips on inclined sections: *Econ. Geology*, vol. 18, no. 4, pp. 393-397, 4 figs., June-July, 1923.
5. Magnetic, electrochemical, and photochemical tests in the identification of opaque minerals: *Econ. Geology*, vol. 22, no. 7, pp. 669-677, 2 figs., November, 1927.
6. Microchemical tests in the identification of opaque minerals: *Econ. Geology*, vol. 22, no. 8, pp. 830-843, December, 1927.
7. Silver-lead-zinc veins at Atlin, British Columbia: *Eng. and Min. Jour.*, vol. 125, no. 12, pp. 495-497, 2 figs., March 24, 1928.
8. Silver mineralization at Beaverdell, British Columbia: *Econ. Geology*, vol. 23, no. 4, pp. 434-441, June-July, 1928.

McKnight, Edwin T. See also Baker, A. A., 1; Bretz, 14.

1. The Spokane flood; a discussion [origin of physiographic features, Washington]: *Jour. Geology*, vol. 35, no. 5, pp. 453-460, July-August, 1927. [See also Bretz, 15].

MacLachlan, Donald C.

1. Geologic structure of a small area in Wayne, Pulaski, and Russell counties, Kentucky: *Michigan Acad. Sci., Papers*, vol. 8, pp. 297-307, 3 pls., 1928.

McLaughlin, D. H. See also Bateman, 3.

1. Copper sulphides in syenite and pegmatite dikes: *Econ. Geology*, vol. 14, no. 5, pp. 403-410, August, 1919.
2. Ore deposition and enrichment at the Evergreen mine, Gilpin County, Colorado: *Econ. Geology*, vol. 14, no. 6, pp. 465-479, 2 pls. September-October, 1919.

McLaughlin, R. P.

1. Conservation of oil and gas resources in California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 4, pp. 17-26, 1920.
2. "Structure" [proper usage of the term]: *Am. Assoc. Petroleum Geologists, Bull.*, 5, no. 1, p. 98, January-February, 1921.
3. Regularity of decline of oil wells in California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 2, pp. 178-185, 10 figs., March-April, 1921.
4. California oil fields: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 5, pp. 623-625, September-October, 1921.

MacLean, A.

1. Lignite in Saskatchewan: *Canadian Inst. Min. and Met., Monthly Bull.* no. 101, pp. 685-699, 5 figs., September, 1920: *Canadian Min. Inst., Trans.*, vol. 23, pp. 308-323 [1921].

McLearn, Frank Harris. See also Dowling, 1.

1. Cretaceous, lower Smoky River, Alberta: Canada, Geol. Survey, Summ. Rept., 1918, pt. C, pp. 1-7, 1919.
3. The Cretaceous of Peace and Athabaska valley's [Alberta]: Canada, Geol. Survey, Mem. 116, pp. 25-33, 1919.
3. New species of pelecypods from the Cretaceous of northern Alberta: Canada, Geol. Survey, Mus. Bull. no. 29, pp. 9-12, 3 pls., October 18, 1919.
4. Little Smoky River, Alberta: Canada, Geol. Survey, Summ. Rept., 1919, pt. C, pp. 13-14, 1920.
5. Three new pelecypods from the Coloradoan of the Peace and Smoky valleys, Alberta: Canadian Field-Naturalist, vol. 34, no. 3, pp. 53-56, 1 pl., March, 1920.
6. Mesozoic of upper Peace River, British Columbia: Canada, Geol. Survey, Summ. Rept., 1920, pt. B, pp. 1-6, 1 fig., 1921.
7. Peace River Canyon coal area, British Columbia: Canada, Geol. Survey, Summ. Rept., 1922, pt. B, pp. 1-46, 2 figs. (incl. map), 1 pl., 1923.
8. Paleontology of the Silurian rocks of Arisaig, Nova Scotia: Canada, Geol. Survey, Mem. 137, 179 pp., 1 fig. (map), 30 pls., 1924.
9. New pelecypods from the Fernie formation of the Alberta Jurassic: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 18, sec. 4, pp. 39-61, 9 pls., 1924.
10. New species from the Coloradoan of lower Smoky and lower Peace rivers, Alberta: Canada, Geol. Survey, Bull. no. 42, pp. 117-126, 4 pls., May 8, 1926.
11. New Jurassic species from the Hazleton group of British Columbia: Canada, Geol. Survey, Bull. no. 44, pp. 89-99, 7 pls., 1926.
12. The Mesozoic and Pleistocene deposits of the lower Missinaibi, Opazatika, and Mattagami rivers, Ontario: Canada, Geol. Survey, Summ. Rept., 1926, pt. C, pp. 16-44, 5 figs., 1927.
13. Some Canadian Jurassic faunas: Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 61-73, 1 pl., March, 1927.
14. (and Hume, G. S.). The stratigraphy and oil prospects of Alberta, Canada: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 3, pp. 237-260, 4 figs. (incl. map), March, 1927; discussion, no. 5, p. 515, May, 1927.
15. New Jurassic Ammonoidea from the Fernie formation, Alberta: Canada, Geol. Survey, Bull. no. 49, pp. 19-22, 5 pls., 1928.
16. Stratigraphy, structure, and clay deposits of Eastend area, Cypress Hills, Saskatchewan: Canada, Geol. Survey, Summ. Rept., 1927, pt. B, pp. 21-53, map, 1928.

McLeish, John.

1. Summary report of investigations made by the Mines Branch during the calendar year ending December 31, 1920: Canada, Department of Mines, Mines Branch, 87 pp., 7 figs., 1922.
2. [Report of the] Mines Branch: Canada, Dept. Mines, Rept., 1924, pp. 49-60, 1925.

McLellan, Mary E. See Hanna, 15.

McLellan, Roy Davidson.

1. The Devonian Orcas group of Washington: Am. Jour. Sci., 5th ser., vol. 8, pp. 217-222, September, 1924.

McLellan, Roy Davidson—Continued.

2. The geology of the San Juan Islands: Washington, Univ., Pub. in Geology, vol. 2, 185 pp., 10 figs., 22 pls., map, November, 1927.

McLennan, J. C.

1. Report on some sources of helium in the British Empire: Canada, Dept. Mines, Mines Branch, Bull. no. 31, 72 pp., 1 pl., 20 figs., 4 maps, 1920.

MacLeod, C. W.

1. The Goudreau gold area [District of Algoma, Ontario]: Canadian Min. Jour., vol. 44, no. 16, pp. 295-297, 1 fig., April 30, 1923.
2. The Goudreau gold area [Ontario]: Canadian Inst. Min. and Met., Bull., no. 167, pp. 393-401, 2 figs., March, 1926; Trans., vol. 29, pp. 183-195, 2 figs. [1927].

MacMacken, Joseph G.

1. Eolative soils of Washington wheat lands: Pan-Am. Geologist, vol. 43, no. 3, pp. 177-184, April, 1925.
2. Lake Lewis and flood waters of Okanogan ice sheet: Pan-Am. Geologist, vol. 48, no. 2, pp. 101-108, September, 1927.

MacMillan, William D.

1. The mathematics of isostasy. Am. Jour. Sci., 4th ser., vol. 49, pp. 318-323, May, 1920.

McMillin, H. C. See Becking, 1.

McNairn, William Harvey.

1. The birth of a science [geology]: Natural History, vol. 20, no. 3, pp. 247-252, May-June, 1920.

MacNaughton, Lewis W.

1. Notes on the undescribed meteorites in the collection of the American Museum of Natural History: Am. Mus. Novitates, no. 207, 2 pp., February 16, 1926.

McNutt, V. H.

1. Obituary, Guy Henry Cox: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 6, pp. 566-569, portr., November-December, 1922.

McQueen, H. S.

1. (and Forbes, C. R.). Mining of diaspore and flint fire clays in Missouri: Mining and Metallurgy, vol. 9, pp. 271-275, 10 figs., June, 1928.

Macready, George A.

1. Petroleum industry of Trinidad: Mining and Metallurgy, no. 165, pp. 21-22, September, 1920 (abstract); Am. Inst. Min. and Met. Eng., Trans. [preprint no. 1017], 10 pp., 1 fig. 1920; Trans., vol. 65, pp. 58-68, 1 fig., 1921.

MacVicar, John.

1. Coal areas northwest of Brule Lake, Alberta: Canada, Geol. Survey, Summ. Rept., 1919, pt. C, pp. 8-13, 1 fig., 1920.
2. Preliminary investigation of coal deposits on Smoky, Hay, and Berland rivers, Alberta: Canada, Geol. Survey, Summ. Rept., 1923, pt. B, pp. 21-62, 7 figs. (incl. maps), 4 pls., 1924.

MacVichie, Duncan.

1. Iron fields of the Iron Springs and Pinto mining districts, Iron County, Utah: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1468, 11 pp., 9 figs., July, 1925; *Trans.*, vol. 74, pp. 163-173, 9 figs., 1926; abstract, *Mining and Metallurgy*, vol. 6, no. 224, p. 441, August, 1925.

Maddren, Alfred Geddes.

1. Sulphur on Unalaska and Akun islands and near Stepovak Bay, Alaska: *U. S. Geol. Survey, Bull.* 692, pp. 283-298, 1 pl. (map), 6 figs., 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 9, no. 20, pp. 634-635, December 4, 1919.
2. The beach placers of the west coast of Kodiak Island, Alaska: *U. S. Geol. Survey, Bull.* 692, pp. 299-319, 1 pl. (map), 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 19, no. 20, p. 635, December 4, 1919.

Mahon, Sadie.

1. The micrology of the middle Washita formations: *Texas, Univ., Bull.*, no. 2544, pp. 67-71, 3 pls., 1925.

Mailhiot, Adhémar.

1. Geology of a portion of the projected township of Lemieux, County of Gaspé, Province of Quebec: Quebec (Province), Department of Colonization, Mines, and Fisheries, *Rept. on Mining Operations*, 1918, pp. 134-145, map, 1919.
2. Geology of Mount Albert, County of Gaspé, Province of Quebec: Quebec (Province), Department of Colonization, Mines, and Fisheries, *Rept. on Mining Operations*, 1918, pp. 146-151, 1919.
3. The upper Harricana River gold area [Timiskaming County, Quebec]: *Canadian Min. Jour.*, vol. 40, pp. 765-770, 12 figs., October 14, 1919.
4. Gold deposits at Lake Demontigny, Abitibi, P. Q.: Quebec (Province). Dept. Colonization *Rept. on Mining Operations*, 1919, pp. 125-158, 3 pls., 5 figs., map, 1920.
5. The new zinc and lead fields of Gaspé Peninsula [Quebec]: *Canadian Min. Inst., Trans.*, vol. 22, pp. 368-377, 1 fig. [1920].
6. Molybdenite deposits of Lacorne Township, Abitibi, P. Q.: *Canadian Min. Jour.*, vol. 41, pp. 135-138, 4 figs., February 18, 1920.

Majorelle, Jean.

1. Les champs de pétrole de l'est des États-Unis: *Revue de l'Industrie Minérale*, no. 55, pp. 177-196, 15 figs., April 1, 1923.

Makemson, Maud Worcester.

1. Locating the epicenter of an earthquake: *Seismological Soc. America, Bull.*, vol. 17, no. 1, pp. 8-14, 1 fig., March, 1927.

Malcolm, Wyatt. See also Brock, 11; Camsell, 1.

1. Contributions to the economic geology of Canada, 1922: *Canadian Min. Jour.*, vol. 44, no. 1, pp. 27-29, January 5, 1923.
2. Joseph Keele; an appreciation: *Canadian Min. Jour.*, vol. 44, no. 25, p. 475, June 22, 1923.
3. Contributions to the economic geology of Canada: *Canadian Min. Jour.*, vol. 45, no. 1, pp. 15-18, January 4, 1924.
4. The mineral industry of Canada. In *Handbook of Canada*, pp. 384-396, 5 figs., Toronto, 1924.

Malcolm, Wyatt—Continued.

5. William McInnes; an appreciation: Canadian Min. Jour., vol. 46, no. 13, pp. 317-318, portr., March 27, 1925.
6. Limestone on Abitibi and Mattagami rivers, Ontario: Canada, Geol. Survey, Summ. Rept., 1924, pt. C, pp. 96-98, 1 fig., 1926.
7. Economic geology of Canada, 1923 and 1924: Canada Yearbook, 1925, pp. 25-30, Canada, Dominion Bureau of Statistics, General Statistics Branch, Ottawa, 1926.
8. (and Robinson, A. H. A.). Canada; geology, mines, and metallurgical industries. 214 pp., 40 pls., 16 maps, Canada, Department of mines, 1927. Prepared for the Second (Triennial) Empire Mining and Metallurgical Congress, 1927.

Malott, Clyde Arnett.

1. The "American Bottom" region of eastern Greene County, Indiana—a type unit in southern Indiana physiography: Indiana Univ. Studies, vol. 6, Study no. 40, 61 pp., 10 figs., 2 maps, March, 1919.
2. (and Thompson, J. D., jr.). The stratigraphy of the Chester series of southern Indiana (abstract): Science, new ser., vol. 51, pp. 521-522, May 21, 1920.
3. A notable case of successive stream piracy in southern Indiana (abstract): Science, new ser., vol. 51, p. 523, May 21, 1920.
4. Some special physiographic features of Knobstone cuesta region of southern Indiana; an example of explanatory physiography: Indiana Acad. Sci. Proc., 1919, pp. 361-383, 7 figs., 2 maps, 1921.
5. Planation stream piracy: Indiana Acad. Sci., Proc., 1920, pp. 249-260, 5 figs., 1 pl., 1921.
6. The physiography of Indiana. In Handbook of Indiana geology (Indiana, Dept. Conservation, Pub. no. 21), pp. 59-256, 51 figs., 3 pls. (incl. maps), Indianapolis, 1922.
7. A subterranean cut-off and other subterranean phenomena along Indian Creek, Lawrence County, Indiana: Indiana Acad. Sci., Proc. 1921, pp. 203-210, 5 figs., 1922.
8. The upper Chester of Indiana: Indiana Acad. Sci., Proc., vol. 34, pp. 103-132, 11 figs., 1925.
9. The glacial boundary in Indiana: Indiana Acad. Sci., Proc., vol. 35, pp. 93-107, 6 figs., 1926.
10. An analysis of erosion: Indiana Acad. Sci., Proc., vol. 37, pp. 153-163, 1928.
11. The valley form and its development: Indiana Univ. Studies, vol. 15, Studies, no. 81, 82, pp. 3-34, December, 1928.
12. Base-level and its varieties: Indiana Univ. Studies, vol. 15, Studies no. 81, 82, pp. 35-59, December, 1928.

Manchester, James G.

1. The minerals of the Bergen archways [New Jersey]: Am. Mineralogist, vol. 4, no. 9, pp. 107-116, 4 pls., 5 figs., September, 1919.

Mann, Albert.

1. Suggestions for collecting and preparing diatoms: U. S. Nat. Mus., Proc., vol. 60, art. 15, 8 pp., 1922.
2. The fossil swamp deposit at the Walker Hotel site, Connecticut Avenue and De Sales Street, Washington, D. C.; diatom deposit found in the excavation: Washington Acad. Sci., Jour., vol. 14, no. 1, pp. 26-32, 1 pl., January 4, 1924.

Mannhardt, L. Alfred. See Wood, H. E., 1.

Manning, Paul De Vries.

1. The genesis of oil shale and its relation to petroleum and other fuels. Dissertation . . . Columbia University, 73 pp., 13 figs., New York, N. Y., 1927.

Mansfield, George Rogers. See also Bretz, 14; Noble, 4; Willis, B., 1.

1. Preliminary report on potash exploration in New Jersey greensands: New Jersey, Dept. Conservation and Development, Ann. Rept. for 1919, pp. 99-104, 1919.
2. General features of the New Jersey glauconite beds: *Econ. Geology*, vol. 14, no. 7, pp. 555-567, November, 1919.
3. Geography, geology, and mineral resources of the Fort Hall Indian reservation, Idaho: U. S. Geol. Survey, Bull. 713, 152 pp., 4 figs., 12 pls. (incl. maps), 1920.
4. Types of Rocky Mountain structure in southeastern Idaho (abstract with discussion by G. W. Stose): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 126-127, March 31, 1920.
5. The Wasatch and Salt Lake formations of southeastern Idaho: *Am. Jour. Sci.*, 4th ser., vol. 49, pp. 399-406, 1 fig., June, 1920.
6. Triassic and Jurassic in southeastern Idaho and neighboring regions: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 53-64, 3 figs., July, 1920.
7. The physical and chemical character of New Jersey greensand: *Econ. Geology*, vol. 15, no. 7, pp. 547-566, 1 pl., November, 1920.
8. Coal in eastern Idaho: U. S. Geol. Survey, Bull. 716, pp. 123-153, 2 pls. (maps), 3 figs., December 14, 1920; abstract, *Washington Acad. Sci., Jour.*, vol. 11, no. 8, p. 193, April 19, 1921.
9. Potash in New Jersey greensands (abstract): *Mining and Metallurgy*, no. 169, pp. 28-29, January, 1921.
10. Igneous geology of southeastern Idaho: *Geol. Soc. America, Bull.*, vol. 32, no. 2, pp. 249-266, 3 figs. (incl. map), June 30, 1921.
11. Types of Rocky Mountain structure in southeastern Idaho: *Jour. Geology*, vol. 29, no. 5, pp. 444-468, 15 figs., July-August, 1921.
12. Potash in the greensands of New Jersey: U. S. Geol. Survey, Bull. 727, 146 pp., 6 figs., 10 pls. (incl. maps), 1922; (reprint) New Jersey, Dept. Conservation and Development, Div. Geology and Waters, Bull. 23, February, 1923.
13. The geography of part of southeastern Idaho (abstract): *Assoc. Am. Geographers, Annals*, vol. 11, pp. 128-129 [1922?]
14. The potash field in western Texas: *Industrial and Eng. Chemistry*, vol. 15, no. 5, pp. 494-497, map, May, 1923.
15. Structure of the Rocky Mountains in Idaho and Montana: *Geol. Soc. America, Bull.*, vol. 34, no. 2, pp. 263-284, 3 figs., June 30, 1923.
16. Nitrates in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 2, pp. 39-40, August 24, 1923.
17. Potash in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 2, pp. 87-107, October 12, 1923.
18. Phosphate rock in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 2, pp. 109-132, October 16, 1923.
19. Tertiary planation in Idaho: *Jour. Geology*, vol. 32, no. 6, pp. 472-487, 5 figs., August-September, 1924; abstract, *Assoc. Am. Geographers, Annals*, vol. 14, no. 1, p. 43, March, 1924.
20. (and Boardman, Leona). Potash in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 2, pp. 167-204, 1 fig., 2 pls., December 12, 1924.

Mansfield, George Rogers—Continued.

21. Phosphate rock in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 2, pp. 239-273, December 20, 1924.
22. Physiography of southeastern Idaho (abstract): Washington Acad. Sci., Jour., vol. 15, no. 8, pp. 182-183, April 19, 1925.
23. Geography of southeastern Idaho: Assoc. Am. Geographers, Annals, vol. 15, no. 2, pp. 51-64, 3 figs., June, 1925.
24. (and Boardman, Leona). Potash in 1924: U. S. Bur. Mines, Mineral Resources U. S., 1924, pt. 2, pp. 27-61, October 24, 1925.
25. Phosphate rock in 1924: U. S. Bur. Mines, Mineral Resources U. S., 1924, pt. 2, pp. 77-112, November 7, 1925.
26. Section E (Geology and geography) [Kansas City session, American Association for the Advancement of Science]: Science, new ser., vol. 63, pp. 126-127, January 29, 1926.
27. The story of the northern Rockies: Sci. Monthly, vol. 23, no. 5, pp. 447-450, November, 1926.
28. Phosphate reserves ample for 2,000 years: Eng. and Min. Jour., vol. 122, no. 21, pp. 810-814, 3 figs., November 20, 1926.
29. Geography, geology, and mineral resources of part of southeastern Idaho: U. S. Geol. Survey, Prof. Paper 152, pp. 1-409, 46 figs., 63 pls., 1927.
30. Summary of the geology of southeastern Idaho with notes on recent work (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, pp. 129-130, March 4, 1927.
31. New potash fields of the United States [California, Utah, Texas-New Mexico]: Min. Congress Jour., vol. 13, no. 3, pp. 187-188, March, 1927.
32. Proceedings of section E of the American Association for the Advancement of Science [Philadelphia, December, 1926]: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 209-217, March 30, 1927.
33. Structural features of southeastern Idaho (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 212, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 4, p. 320, May, 1927.
34. How the fertilizer minerals of commerce are distributed: Eng. and Min. Jour., vol. 123, no. 14, pp. 567-570, April 2, 1927.
35. The Idaho phosphate field: Mining and Metallurgy, vol. 9, no. 253, pp. 19-20, 2 figs., January, 1928.
36. Geography, geology and mineral resources of part of southeastern Idaho—a summary (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 191, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 144, March, no. 4, pp. 299-300, May, 1928.
37. Proceedings of section E of the American Association for the Advancement of Science: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 272-280, March 30, 1928.
38. American potash: Tech. Eng. News (Mass. Inst. Technology), vol. 9, no. 3, pp. 94-95, 120, 122, 124, April, 1928.

Mansfield, Wendell C. See also Woodring, 7.

1. A contribution to the late Tertiary and Quaternary paleontology of northeastern Florida: Florida State Geol. Survey, 15th Ann. Rept., 1922-1923, pp. 25-51, 2 pls., 1924.
2. Miocene gastropods and scaphopods from Trinidad, British West Indies: U. S. Nat. Mus., Proc., vol. 66, art. 22, 65 pp., 10 pls., September 18, 1925.

Mansfield, Wendell C.—Continued.

3. Note on the occurrence of the Choptank formation in the Nomini Cliffs, Virginia: *Washington Acad. Sci., Jour.*, vol. 16, no. 7, pp. 175–177, April 4, 1926.
4. Some peculiar fossil forms from Maryland: *U. S. Nat. Mus., Proc.*, vol. 71, art. 16, 9 pp., 5 pls., 1927.
5. Oil-prospecting well near Havelock, North Carolina: North Carolina, Dept. Conservation, *Econ. Paper* no. 58, 19 pp., 1927.
6. Notes on the Pleistocene faunas from Maryland and Virginia and Pliocene and Pleistocene faunas from North Carolina: *U. S. Geol. Survey, Prof. Paper* 150, pp. 129–140, 1 fig., 2 pls., February 20, 1928.
7. New fossil mollusks from the Miocene of Virginia and North Carolina, with a brief outline of the divisions of the Chesapeake group: *U. S. Nat. Mus., Proc.*, vol. 74, art. 14, 11 pp., 5 pls., 1928.

Manson, Marsden.

1. Secular changes of geological climates: *Pan.-Am. Geologist*, vol. 37, no. 4, pp. 301–306, May, 1922.
2. The evolution of climates. 66 pp., 1 fig., copyright by Marsden Manson, 1922. Review by F. H. Knowlton, *Science*, new ser., vol. 56, pp. 254–255, September 1, 1922.
3. The evolution of climates—a rejoinder: *Science*, new ser., vol. 56, pp. 571–573, November 17, 1922.
4. The unsatisfactory status of the glacial controversy: *Science*, new ser., vol. 62, pp. 212–214, September 4, 1925.

Marble, Charles F.

1. Gems found in Maine: *Rocks and Minerals*, vol. 1, no. 2, pp. 22–23, December, 1926.
2. Mineral localities of Maine; the Greenwood mine: *Rocks and Minerals*, vol. 2, no. 3, p. 88, September, 1927.
3. Mineral localities of Maine; the Rumford tin mine: *Rocks and Minerals*, vol. 2, no. 4, p. 125, December, 1927.
4. Mineral localities of Maine; the Hartford chrysoberyl prospect: *Rocks and Minerals*, vol. 3, no. 1, p. 21, March, 1928.
5. Petalite at Peru, Maine: *Rocks and Minerals*, vol. 3, no. 4, p. 125, December, 1928.

Margerie, Emmanuel de.

1. Une mission d'enseignement géologique aux États-Unis: *Soc. géol. Belgique, Livre jubilaire, 1874–1924*, t. 1, fasc. 1, pp. 213–226 [n. d., 1925?].
2. Commentaire de l'atlas of Colorado (1877): France, Comité des travaux historiques et scientifiques, *Bulletin de la Section de géographie*, t. 39, ann. 1924, pp. 1–80, 8 figs., 4 pls. (portr.), 7 maps, 1924 [1925].

Marks, E. M. See Lupton, 5.

Marks, J. E.

1. The iron ranges of northwestern Ontario: *Lake Superior Min. Inst., Proc.* 24th Ann. Meeting, vol. 24, pp. 200–208, 1 fig. (map), 1925.

Marland Oil Co. of Mexico.

1. Informe sobre la exploración geológica de la Baja California: *Bol. petróleo*, vol. 17, no. 6, pp. 417–453, June, vol. 18, no. 1, pp. 14–53, 60 pls., map, July, 1924.

Marr, J. E.

1. Obituary, Charles Doolittle Walcott, LL. D., Sc. D., Ph. D.: *Geol. Mag.*, vol. 64, pp. 189-190, April, 1927.

Marshall, J. R.

1. Upper Elk River valley, British Columbia: Canada, Geol. Survey, *Summ. Rept.*, 1920, pt. B, pp. 7-10, 1921.
2. Kananaskis Lakes-Palliser River map area: Canada, Geol. Survey, *Summ. Rept.*, 1921, pt. B, pp. 91-94, 1922.
3. Whitesail-Tahtsa lakes area, British Columbia: Canada, Geol. Survey, *Summ. Rept.*, 1924, pt. A, pp. 47-58, map, 1925.
4. Eutsuk Lake area, Coast district, British Columbia: Canada, Geol. Survey, *Summ. Rept.*, 1925, pt. A, pp. 144-154, map, 1926.
5. Lakelse Lake map area, coast district, British Columbia: Canada, Geol. Survey, *Summ. Rept.*, 1926, pt. A, pp. 35-44, 1 fig. (map), 1927.
6. Clearwater Lake map area, British Columbia: Canada, Geol. Survey, *Summ. Rept.*, 1927, pt. A, pp. 42-46, 1928.

Marshall, William Blanchard.

1. New fossil fresh-water mollusks from Florida: *U. S. Nat. Mus., Proc.*, vol. 68, art. 11, 4 pp., 1 pl., 1926.

Martens, James Hart Curry. See also Gunter, 11.

1. Study of the igneous rocks of Ithaca, New York, and vicinity (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 99, March 30, 1923.
2. Scorodite from Putnam County, New York: *Am. Mineralogist*, vol. 9, no. 2, pp. 27-28, February, 1924.
3. Igneous rocks of Ithaca, New York, and vicinity: *Geol. Soc. America, Bull.*, vol. 35, no. 2, pp. 305-320, 1 fig., June 30, 1924.
4. Glacial boulders in eastern, central, and northern New York: *New York State. Mus. Bull.*, no. 260, pp. 81-116, 4 figs., 1925.
5. Barite and associated minerals in concretions in the Genesee shale [central New York]: *Am. Mineralogist*, vol. 10, no. 4, pp. 102-104, April, 1925.
6. Sulphate minerals from weathering of shale near Ithaca, New York: *Am. Mineralogist*, vol. 10, no. 7, pp. 175-176, July, 1925.
7. Some pre-Cambrian rocks in northern Quebec: *Canadian Min. and Met. Bull.*, no. 177, pp. 99-126, 14 figs. (incl. map), January, 1927; *Canadian Inst. Min. and Met., Trans.*, vol. 30, pp. 274-301, 14 figs. (incl. map) [1928].
8. Sand and gravel deposits of Florida: *Florida State Geol. Survey*, 19th Ann. Rept., pp. 33-123, 25 figs., 1 pl. (map), 1928.
9. Beach deposits of ilmenite, zircon, and rutile in Florida: *Florida State Geol. Survey*, 19th Ann. Rept., pp. 124-154, 11 figs., 1928.

Martin, Gail.

1. Geological conditions at Bingham, Utah: *Min. Jour. (Phoenix, Ariz.)*, vol. 11, no. 8, pp. 7, 14-15, February 15, 1928.

Martin, George Curtis. See also Brooks, 3, 4, 5; Capps, 2, 3, 4; Chapin, 4, 5, 6; Harrington, 2, 3, 4, 5; Hobbs, 16; Mertie, 2, 3.

1. The Nenana coal field, Alaska: *U. S. Geol. Survey, Bull.* 664, 54 pp., 11 pls. (maps), 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 9, no. 11, pp. 320-321, June 4, 1919.
2. The Alaskan mining industry in 1917: *U. S. Geol. Survey, Bull.* 692, pp. 11-42, 1919.

Martin, George Curtis—Continued.

3. Geologic problems at the Matanuska coal mines [Alaska]: U. S. Geol. Survey, Bull. 692, pp. 269–282, 3 figs., 1919. Abstract, Washington Acad. Sci., Jour., vol. 9, no. 20, p. 634, December 4, 1919.
4. Gold, silver, copper, and lead in Alaska in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 127–142, October 30, 1919.
5. (and others). Mineral resources of Alaska; report on progress of investigations in 1918: U. S. Geol. Survey, Bull. 712, 204, xv pp., 6 pls. (incl. maps), 10 figs., 1920.
6. Mineral resources of Alaska; preface; administrative report: U. S. Geol. Survey, Bull. 712, pp. 1–10, 1919.
7. The Alaskan mining industry in 1918: U. S. Geol. Survey, Bull. 712, pp. 11–52, 1919.
8. Preliminary report on petroleum in Alaska: U. S. Geol. Survey, Bull. 719, 83 pp., 6 figs., 11 pls. (incl. maps), 1921.
9. Gold lodes in the upper Kuskokwim region, Alaska: U. S. Geol. Survey, Bull. 722, pp. 149–161, 1 pl., 2 figs. (maps), 1921.
10. A supposed petroleum seepage in the Nenana coal field [Alaska]: U. S. Geol. Survey, Bull. 739, pp. 137–147, 2 figs., 1922.
11. Natural coal tar mistaken for oil residue: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, pp. 293–302, 1 fig., July–August, 1922.
12. Petroleum in Alaska: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2, pp. 1173–1180, 1 fig. [1924].
13. Correlation and paleogeography of the Cretaceous of Alaska: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2, pp. 1345–1359 [1924].
14. The outlook for petroleum near Chignik [Alaska]: U. S. Geol. Survey, Bull. 773, pp. 209–213, map, 1925.
15. The Mesozoic stratigraphy of Alaska: U. S. Geol. Survey, Bull. 776, 493 pp., 13 figs., 1926.

Martin, Handel T. See also Adams, L. A., 4.

1. *Anguillavus hackberryensis*; a new species and a new genus of fish from the Niobrara Cretaceous of Kansas: Kansas Univ. Sci. Bull., vol. 13, no. 7, pp. 95–98, 1 pl., May, 1920.
2. Discovery of gigantic footprints in the coal measures of Kansas: Science, new ser., vol. 55, pp. 99–100, January 27, 1922.
3. Huge amphibian from the upper coal measures of Kansas (abstract) Geol. Soc. America, Bull., vol. 33, no. 1, p. 212, March 31, 1922.
4. Indications of a gigantic amphibian in the coal measures of Kansas: Kansas Univ. Sci. Bull., vol. 13, no. 12, pp. 101–113, 3 pls., July, 1922.
5. A new bison from the Pleistocene of Kansas, with notice of new locality for *Bison occidentalis*: Kansas Univ. Sci. Bull., vol. 15, no. 6, pp. 273–278, December, 1924.
6. On the occurrence of *Bison latifrons* in Comanche County, Kansas: Kansas, Univ., Bull., vol. 28, no. 18, Sci. Bull., vol. 17, no. 7, pp. 397–407, 2 pls., September, 1927.

Martin, Helen M. See Allen, R. C., 3, 4; Smith, R. A., 2.

Martin, Laura Hatch.

1. The geology of the Stonington region, Connecticut: Connecticut State Geol. and Nat. Hist. Survey, Bull. no. 33, 70 pp., 9 figs., 8 pls., map, 1925.

Martin, Lawrence.

1. A Pennsylvanian's discovery of the Driftless Area: Geog. Soc. Philadelphia, Bull., vol. 31, no. 4, pp. 32-39 (140-147), 1 fig., October, 1923.
2. (and Williams, Frank E.). An ice-eroded fiord; the mode of origin of Lynn Canal, Alaska: Geog. Rev., vol. 14, no. 4, pp. 576-596, 22 figs., October, 1924.

Martínez, Juan. See Wandke, 8.

Martínez Quintero, Rodolfo.

1. Estudio microscópico de las arenas volcánicas del Popocatepetl: Mexico, Inst. geol., Anales, t. 2, nos. 1-3, pp. 61-63, 1925.

Marvin, Charles Frederick.

1. Earthquake and volcano investigations of the United States Weather Bureau: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, p. 424, 1921.

Marzel, John G.

1. Fourteenth biennial report of the State geologist of the State of Wyoming, October 1, 1926-September 30, 1928. 110+22 pp., table, Cheyenne, Wyoming [1928?].

Mason, Herbert L. See also Chaney, 23.

1. Fossil records of some west American conifers: Carnegie Inst. Washington, Pub. 346 (Contributions to Paleontology), pp. 139-158, 5 pls., October, 1927.

Mason, Max Sylvan.

1. Physical exploration for ores: Min. and Met. Soc. America, Bull. no. 191 (vol. 20, no. 5), pp. 98-133, 21 figs., November, 1927; (with discussion), Am. Inst. Min. and Met. Eng., Tech. Pub. no. 45, 32 pp., 21 figs., December, 1927.

Mason, Shirley L. See Barton, 10.

1. A statistical investigation of the effects of structure upon oil and gas production in the Osage [Nation, Oklahoma]: Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 407-417, 6 figs., 1919.

Mather, Kirtley Fletcher. See also Atwood, W. W., 4; Daly, 20; Heald, 4; Schuchert, 20; Shaw, E. W., 1; Trask, 6.

1. The manipulation of the telescopic alidade in geologic mapping: Denison Univ., Sci. Lab., Bull., vol. 19, pp. 97-142, 13 figs., September 1919.
2. (and Mehl, Maurice G.) The importance of drainage area in estimating the possibilities of petroleum production from an anticlinal structure: Denison Univ., Sci. Lab., Bull., vol. 19, pp. 143-146, 1 pl., September, 1919.
3. Oil and gas resources of the northeastern part of Sumner County, Tennessee: Tennessee, State Geol. Survey, Bull. 24 (Pt. 2-B, Ann. Rept., 1919), 39 pp., 1 pl. (map), 1 fig., 1920.
4. Revolution vs. evolution; the paleontologist renders his verdict: Denison Univ., Scientific Laboratories, Jour., vol. 19, pp. 307-323, September, 1921.
5. The underground migration of oil and gas: Denison Univ., Sci. Lab., Jour., vol. 20, pp. 155-185, 1 fig., June, 1923.

Mather, Kirtley Fletcher—Continued.

6. Geologic factors in organic evolution: *Ohio Jour. Sci.*, vol. 24, no. 3, pp. 117-145, May, 1924.
7. Mineral resources of the Kamishak Bay region [Alaska]: *U. S. Geol. Survey, Bull.* 773, pp. 159-181, map, 1925.
8. Physiographic surfaces in the Front Range of northern Colorado and their equivalents on the Great Plains (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 134-135, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 1, pp. 76-77, February, 1925.
9. (and Lusk, Ralph G.). A laboratory manual of dynamic and structural geology. 103 pp., Cambridge, Harvard University Press, 1926.
10. Glacial geology of Cape Breton Island, Nova Scotia (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 178-180, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 169, March, 1926.
11. Ralph Gordon Lusk: *Science, new ser.*, vol. 66, pp. 292-293, September 30, 1927.
12. (and Gilluly, James, and Lusk, Ralph G.). Geology and oil and gas prospects of northeastern Colorado: *U. S. Geol. Survey, Bull.*, 796, pp. 65-124, 5 figs., 5 pls. (incl. map), January 17, 1928.
13. *Old Mother Earth*. 177 pp., 61 figs., Cambridge, Harvard University Press, 1928.
14. Dynamical and structural geology. *Am. Year Book*, 1927, pp. 594-596, 1928.

Mathews, Edward Bennett. See also Swartz, C. K., 3.

1. Relative efficiency of normative and modal classifications of igneous rocks (abstract): *Geol. Soc. American, Bull.*, vol. 30, pp. 91-92, March 31, 1919.
2. Relation of student and teacher: *Geol. Soc. America, Bull.*, vol. 31, no. 3, pp. 393-394, September 30, 1920.
3. (and Little, H. P.). Geology and geography in the United States: *Geol. Soc. America, Bull.*, vol. 32, no. 2, pp. 227-248, 4 figs., June 30, 1921; *National Research Council, Reprint and Circular Series*, no. 17, 22 pp., 1921. Abstract, *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 44, March 31, 1921.
4. Origin, distribution, and uses of clay with special reference to the fire clays of western Maryland: *Maryland Geol. Survey*, vol. 11, pp. 291-336, 1922.
5. Catalogue of published bibliographies in geology, 1896-1920: *Nat. Research Council, Bull.*, vol. 6, pt. 5, no. 36, October, 1923.
6. Maryland [mineral resources]: *The South's Development, Manufacturers Record*, vol. 86, no. 24, pt. 2, pp. 384-386, December 11, 1924.
7. (Editor). Fifty years' progress in geology, 1876-1926; papers presented at the geological conference during the fiftieth anniversary of the Johns Hopkins University, October, 1926: *Johns Hopkins Univ., Studies in Geology*, no. 8, 161 pp., Baltimore, 1927.
8. Progress in structural geology: *Johns Hopkins Univ., Studies in Geology*, no. 8, pp. 137-161, 1927.

Mathias, Henry Edwin.

1. Syngenetic origin of pyrite concretions in the Pennsylvanian shales of north-central Missouri: *Jour. Geology*, vol. 36, no. 5, pp. 440-450, July-August, 1928.

Matley, Charles Alfred.

1. Report on the work of the Government geologist and on the progress of the geological surveys in Jamaica for economic purposes: Supplement to the Jamaica Gazette, vol. 46, no. 9, pp. 225-231, July 4, 1923; Jamaica, Ann. Gen. Rept. for 1922, pp. 77-83, 1924.
2. Some recent contributions to the geology of Jamaica, with a bibliography. In Cundall, Frank, The Handbook of Jamaica for 1923, pp. 676-688, Kingston, Government Printing Office, 1923. Excerpt 16 pp., 1923.
3. Report on the hydrology of the Liguanea plain and on the possibilities of irrigating it. 5 pp. [issued with (?) The Jamaica Gazette, Extraordinary, no. 45, August 10, 1923].
4. Report by the Government geologist on the progress of the geological surveys in Jamaica in connection with its water resources for the period June, 1923, to April, 1924: Supplement to the Jamaica Gazette, vol. 47, no. 7, pp. 45-48, May 23, 1924; Jamaica, Ann. Gen. Rept. for 1923, pp. 18-21, 1925.
5. Report by the government geologist on the progress of the geological surveys in Jamaica for economic purposes (except as regards water resources) for the period June, 1923, to April, 1924: Jamaica Gazette, Supplement, vol. 47, no. 12, pp. 128-130, July, 1924.
6. Recent geological work in Jamaica (abstract): Pan-Am. Geologist, vol. 42, no. 4, pp. 311-313, November, 1924.
7. Reconnaissance geological survey of Cayman Islands, British West Indies (abstract): Pan-Am. Geologist, vol. 42, no. 4, pp. 313-315, November, 1924.
8. Report of a reconnaissance geological survey of the Cayman Islands: Jamaica, Ann. Gen. Rept. for 1923, pp. 41-45, 1925.
9. Report by the government geologist on the progress of the geological surveys in Jamaica for economic purposes (except as regards water resources) for the period June, 1923, to April, 1924: Jamaica, Ann. Gen. Rept. for 1923, pp. 100-102, 1925.
10. Report on a mineral spring at Windsor, St. Ann, and on the probability of the occurrence of petroleum in its neighborhood: Jamaica, Ann. Gen. Rept. for 1923, pp. 306-308, 1925.
11. Report on the strata in the valley of St. Ann's Great River, Parish of St. Ann, Jamaica: Supplement to the Jamaica Gazette, vol. 48, no. 3, pp. 13-15, January 15, 1925.
12. Recent geological work in Jamaica (abstract): British Assoc. Adv. Sci. Rept. 92d Meeting, pp. 391-392, 1925.
13. A reconnaissance geological survey of the Cayman Islands, British West Indies (abstract): British Assoc. Adv. Sci., Rept. 92d Meeting, pp. 392-393, 1925.
14. The geology of the Cayman Islands, British West Indies, and their relations to the Bartlett trough: Geol. Soc. London, Quart. Jour., vol. 82, pt. 3, pp. 352-387, 13 figs., October 19, 1926; abstract, with discussion, Geol. Soc. London, Abstracts of Proc., no. 1150, pp. 74-76, April 29, 1926.

Matsumoto, Hikoshichirô.

1. Revision of *Palaeomastodon* and *Moeritherium*; *Palaeomastodon intermedius* and *Phiomia osborni*, new species (with note by H. F. Osborn): Am. Mus., Novitates, no. 51, 6 pp., 3 figs., November 21, 1922.

Matsuyama, Motonori.

1. On some physical properties of ice (with introductory note by T. C. Chamberlin): *Jour. Geology*, vol. 28, no. 7, pp. 607-631, 13 figs., October-November, 1920.

Matteson, W. G. See also Brokaw, 1.

1. A review of the development in the new central Texas oil fields during 1918: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 3, pp. 163-211, 5 figs., 1919. *Econ. Geology*, vol. 14, no. 2, pp. 95-146, 1 pl., 3 figs., March-April, 1919.
2. Secondary intrusive origin of Gulf Coastal Plain salt domes: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1048, 28 pp., February, 1921; abstract, *Mining and Metallurgy*, no. 170, p. 37, February, 1921; discussion, by Eugene Coste, E. W. Shaw, J. E. Pogue, F. C. Clapp, E. DeGolyer, W. G. Matteson, H. W. Hixon, R. V. A. Mills, *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1073, pp. 23-32, May, 1921; [preprint] no. 1088, pp. 21-24, August, 1921; *Trans.* vol. 65, pp. 295-334, 1921.

Matthes, François Emile.

1. Relief shading of topographic maps (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 10, p. 293, May 19, 1919.
2. Cockscomb Crest [Sierra Nevada]: *Sierra Club Bull.*, vol. 11, no. 1, pp. 21-28, 5 pls., January, 1920.
3. The story of Yosemite Valley: U. S., National Park Service, *Making of American Scenery*, no. 1, 4 pp. [1922].
4. Evidences of two glacial stages in the Sierra Nevada (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 69-70, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, pp. 138-139, March, 1924.
5. Hanging side valleys of the Yosemite and the San Joaquin Canyon (abstract): *Washington Acad. Sci., Jour.*, vol. 14, no. 15, pp. 379-380, September 19, 1924.
6. Evolution Basin [Sierra Nevada, California] (abstract): *Assoc. Am. Geographers, Annals*, vol. 15, no. 1, p. 41, March, 1925.
7. Evidences of recurrent glaciation in the Sierra Nevada of California (abstract): *Science*, new ser., vol. 61, pp. 550-551, May 22, 1925.
8. Devil's Post-pile in the Sierra Nevada (abstract): *Pan-Am. Geologist*, vol. 43, no. 5, p. 372, June, 1925.
9. Kings River Canyon and Yosemite Valley: *Sierra Club Bull.*, vol. 12, no. 3, pp. 224-236, 5 pls., 1926.
10. Influence of subsidiary dislocations in the strata of the Grand Canyon on the development of its topography (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 213, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 4, p. 318, May, 1927.
11. Influence of secondary faults on the development of the Grand Canyon topography (abstract): *Washington Acad. Sci., Jour.*, vol. 17, no. 9, pp. 233-234, May 4, 1927.
12. Evidence of three glaciations in the Yosemite region (abstract): *Washington Acad. Sci., Jour.*, vol. 18, no. 9, p. 260, May 4, 1928.
13. The boundary between the Pleistocene and the Recent in the Sierra Nevada of California: *Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc.*, pp. 1766-1767, 1928.

Matthes, Gerard H.

1. Aerial photography as an aid in geological studies: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 76, pp. 321-336, 4 figs., 1928.

Matthes, O.

1. (and Oberföll, L). Epidot von Alaska: Festschrift Victor Goldschmidt, pp. 175-178, Heidelberg, Carl Winters Universitätsbuchhandlung, 1928.

Matthew, George Frederick, 1837-1923. See also Bailey, L. W., 1.

1. The delta of the Little River group and some of its peculiarities: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 13, sec. 4, pp. 17-21, 1920.
2. A Devonian glacier [St. John area, new Brunswick]; Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 14, sec. 4, pp. 1-6, 1921.
3. On the Mispec group (Devonian) [near St. John, New Brunswick]: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 15, sec. 4, pp. 105-109, 1921.

Matthew, William Diller, 1871-1930. See also Clarke, J. M., 11; Sinclair, 7.

1. Affinities and origin of the Antillean mammals: Geol. Soc. America, Bull., vol. 29, no. 4, pp. 657-666, December 30, 1918.
2. Contributions to the Snake Creek fauna; with notes upon the Pleistocene of western Nebraska: Am. Mus. Nat. Hist., Bull., vol. 38, pp. 183-229, 7 pls., 20 figs., 1918.
3. (and Granger, Walter). A revision of the lower Eocene Wasatch and Wind River faunas; Part V, Insectivora (continued), Glires, Edentata: Am. Mus. Nat. Hist., Bull., vol. 38, pp. 565-657, 68 figs., 1918.
4. [Evolution of the dinosaurs.]: Natural History, vol. 19, nos. 4-5, pp. 491-493, April-May, 1919.
5. Recent discoveries of fossil vertebrates in the West Indies and their bearing on the origin of the Antillean fauna: Am. Philos. Soc., Proc., vol. 58, no. 3, pp. 161-181, 1919. Abstract, Science, new ser., vol. 49, pp. 546-547, June 6, 1919.
6. Plato's Atlantis in paleogeography: Nat. Acad. Sci., Proc., vol. 6, no. 1, pp. 17-18, January 15, 1920.
7. Flying reptiles: Natural History, vol. 20, no. 1, pp. 73-81, 4 figs., January-February, 1920.
8. Status and limits of the Paleocene (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 221, March 31, 1920.
9. New specimen of the Pleistocene bear *Arctotherium* from Texas (abstract): Geol. Soc. America, Bull., vol. 21, no. 1, pp. 224-225, March 31, 1920.
10. John Campbell Merriam: new president of the Carnegie Institution: Natural History, vol. 20, no. 3, pp. 253-254, portr., May-June, 1920.
11. A new genus of rodents [*Reithroparamys*] from the middle Eocene: Jour. Mammalogy, vol. 1, no. 4, pp. 168-169, August, 1920.
12. Social evolution; a paleontologist's viewpoint: Natural History, vol. 20, no. 4, pp. 374-377, September-October, 1920.
13. Canadian dinosaurs: Natural History, vol. 20, no. 5, pp. 539-544, 4 figs., November-December, 1920.
14. The proofs of the evolution of man: Natural History, vol. 20, no. 5, pp. 574-575, November-December, 1920.
15. The Cannonball Lance formation: Science, new ser., vol. 54, pp. 27-29, July 8, 1921.
16. (and Granger, Walter). New genera of Paleocene mammals: Am. Mus. Novitates, no. 13, 7 pp., September 6, 1921.

Matthew, William Diller—Continued.

17. *Stehlinius*, a new Eocene insectivore: Am. Mus. Novitates, no. 14, 5 pp., 2 figs., September 7, 1921.
18. Fossil vertebrates and the Cretaceous-Tertiary problem: Am. Jour. Sci., 5th ser., vol. 2, pp. 209-227, October, 1921.
19. Why paleontology?: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 21, no. 6, pp. 639-641, 1 fig., November-December, 1921.
20. Phyletic relations of Lance vertebrates: Pan-Am. Geologist, vol. 37, no. 1, pp. 68-69, February, 1922.
21. New light on the phylogeny of the Canidae (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 214, March 31, 1922.
22. A superdreadnaught of the animal world—the armored dinosaur *Palaeoscincus*: Natural History (Jour. Am. Mus. Nat. Hist.), vol. 22, no. 4, pp. 333-342, 5 figs., July-August, 1922.
23. (and Brown, Barnum). The family Deinodontidae with notice of a new genus from the Cretaceous of Alberta: Am. Mus. Nat. Hist., Bull., vol. 46, pp. 367-385, 1 fig., 1922.
24. Stratigraphy of the Snake Creek fossil quarries and the correlation of the faunas (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 131, March 30, 1923.
25. Fossil bones in the rock; the fossil quarry near Agate, Sioux County, Nebraska: Natural History, vol. 23, no. 4, pp. 359-369, 11 figs., July-August, 1923.
26. Recent progress and trends in vertebrate paleontology (presidential address): Geol. Soc. America, Bull., vol. 34, no. 3, pp. 401-418, September 30, 1923; Smithsonian Inst., Ann. Rept., 1923, pp. 273-289, 1925.
27. (and Brown, Barnum). Preliminary notices of skeletons and skulls of Deinodontidae from the Cretaceous of Alberta: Am. Mus. Novitates, no. 89, 10 pp., 5 figs., October 11, 1923.
28. Memorial of George F. Matthew: Geol. Soc. America, Bull., vol. 35, no. 1, pp. 181-182, March 30, 1924.
29. A new link in the ancestry of the horse [*Plesippus*]: Am. Mus. Novitates, no. 131, 2 pp., September 23, 1924; abstract, British Assoc. Adv. Sci., Rept. 92d Meeting, pp. 380-381, 1925.
30. Blanco and associated formations of northern Texas (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, pp. 221-222, March 30, 1925.
31. Fossil mammal faunas of Florida (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 225, March 30, 1925.
32. The value of paleontology: Natural History (Jour. Am. Mus. Nat. Hist.), vol. 25, no. 2, pp. 166-168, March-April, 1925.
33. (and Barbour, E. H.). An American fossil giraffe, *Giraffa nebrascensis*, sp. nov.: Nebraska State Mus., Bull. 4, vol. 1, pp. 33-40, 7 figs., April, 1925.
34. The evolution of the horse; a record and its interpretation: Quart. Rev. Biology, vol. 1, no. 2, pp. 139-185, 27 figs., 1 pl., April, 1926.
35. On a new primitive deer and two traguloid genera from the lower Miocene of Nebraska: Am. Mus. Novitates, no. 215, 8 pp., 3 figs., May 10, 1926.
36. Early days of fossil hunting in the High Plains: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 26, no. 5, pp. 449-454, 5 figs., September-October, 1926.

Matthew, William Diller—Continued.

37. (and Siegfriedt, J. C. F.). New fossil mammals from the Fort Union of Montana (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 300, March 30, 1928.
38. Affinities of some new Paleocene mammals from Fort Union beds (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 319, May, 1928.
39. Outline and general principles of the history of life: California, Univ. Syllabus ser., Syllabus no. 213, 253 pp., 21 figs., 1928. [Not seen.]

Matthews, Asa A. L.

1. Marine lower Triassic beds of Utah (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 200, March 30, 1925.

Maury, Carlotta Joaquina.

1. On the correlation of Porto Rican Tertiary formations with other Antillean and mainland horizons: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 209-215, September, 1919.
2. A proposal of two new Miocene formational names: *Science*, new ser., vol. 50, p. 591, December 26, 1919.
3. Tertiary Mollusca from Porto Rico and their zonal relations: *Scientific Survey of Porto Rico and the Virgin Islands*, vol. 3, pt. 1, pp. 1-77, 9 pls., New York Acad. Sci., 1920.
4. Recent mollusks of the Gulf of Mexico and Pleistocene and Pliocene species from the Gulf States; Part I, Pelecypoda: *Bull. Am. Paleontology*, vol. 8, no. 34, 115 pp., 1 pl., December 15, 1920.
5. Recent Mollusca of the Gulf of Mexico and Pleistocene and Pliocene species from the Gulf States; Part 2, Scaphopoda, Gastropoda, Amphineura, Cephalopoda: *Bull. Am. Paleontology*, vol. 9, no. 38, 142 pp., January 31, 1922.
6. The recent Arcas of the Panamic province: *Palaeontographica Americana*, vol. 1, no. 4, pp. 163-208, 3 pls., December 25, 1922.
7. A new formational name [Soldado formation, Trinidad region]: *Science*, new ser., vol. 61, p. 43, January 9, 1925.
8. A further contribution to the paleontology of Trinidad (Miocene horizons): *Bull. Am. Paleontology*, vol. 10, no. 42, 250 pp., 43 pls., March 27, 1925.
9. *Trinitasia*, a new molluscan genus from South America: *Science*, new ser., vol. 67, p. 318, March 23, 1928.
10. The Brasso fossiliferous Miocene of Trinidad, West Indies: *Science*, new ser., vol. 67, p. 348, March 30, 1928.

Mawdsley, J. B. See also James, W. F., 4, 5, 6, 7.

1. St. Urbain area, Charlevoix district, Quebec: *Canada, Geol. Survey, Mem.* 152, 58 pp., 9 figs., 2 pls., map, 1927.
2. The Chibougamau district, Quebec: *Quebec, Dept. Colonization, Mines and Fisheries, Report on Mining operations*, 1927, pp. 182-198, 1928; *Canadian Min. Jour.*, vol. 49, no. 46, pp. 942-945, 2 figs., November 16, 1928.
3. Eagle River area, Abitibi territory, Quebec: *Quebec, Dept. Colonization, Mines and Fisheries, Report on the Mining Operations*, 1927, pp. 199-204, 1928.
4. Recent geological investigations in Chibougamau district, Quebec: *Canadian Min. and Met. Bull.*, no. 198, pp. 1213-1227, October, 1928; abstract, *Min. Mag.*, vol. 39, no. 5, pp. 323-324, November, 1928.

Mawdsley, J. B.—Continued.

5. Lake David area, Chibougamau district, Quebec: Canada, Geol. Survey, Summ. Rept., 1927, pt. C, pp. 1-22, map, 1928.
6. Eagle River area, Abitibi territory, Quebec: Canada, Geol. Survey, Summ. Rept., 1927, pt. C, pp. 23-26, 1928.

Maxson, John H.

1. *Merychippus isonesus* (Cope) from the later Tertiary of the Crooked River basin, Oregon: Carnegie Inst. Washington, Contributions to Palaeontology, Pub. no. 393, pp. 55-58, 1 fig., September, 1928; abstract, Pan-Am. Geologist, vol. 49, no. 4, p. 319, May, 1928.

Maynard, J. E. See also Moore, 21; Wallace, 11.

1. The clays of the Lake Agassiz Basin: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 19, sec. 4, pp. 103-114, 1925.

Maynard, Thomas Poole.

1. Cartersville potash slates; their economic relation to chemical and industrial post-war development (abstract): Geol. Soc. America, Bull., vol. 30, p. 112, March 31, 1919.
2. (and others). Directory of commercial minerals in Georgia and Alabama along the Central of Georgia Railway. 154 pp., illus., issued by Industrial Department, Central of Georgia Railway, Savannah, Georgia, n. d. [1923?].

Mayor, Alfred Goldsborough.

1. Bibliographical memoir Samuel Hubbard Scudder, 1837-1911; Nat. Acad. Sci., Mem., vol. 17, pp. 79-104, portr., 1924.

Mead, Warren Judson.

1. Notes on the mechanics of geologic structures: Jour. Geology, vol. 28, no. 6, pp. 505-523, 12 figs., September-October, 1920.
2. Determination of attitude of concealed bedded formations by diamond drilling: Econ. Geology, vol. 16, no. 1, pp. 37-47, 7 figs., January, 1921.
3. (and Swanson, C. O.). X-ray determination of minerals: Econ. Geology, vol. 19, no. 5, pp. 486-489, August, 1924.
4. The geologic rôle of dilatancy: Jour. Geology, vol. 33, no. 7, pp. 685-698, 9 figs., October-November, 1925.

Meek, Charles E.

1. Notes on the stratigraphy and Pleistocene fauna from Peard Bay, Arctic Alaska: California, Univ., Dept. Geol. Sci., Bull., vol. 14, no. 13, pp. 409-422, 1 fig., 5 pls., November 23, 1923.
2. Genesis of a sandstone dike as indicated by heavy minerals: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 3, pp. 271-277, 1 fig., March, 1928.

Megathlin, G. R.

1. Spodumene and autunite from Alstead, New Hampshire: Am. Mineralogist, vol. 13, no. 12, pp. 578-579, December, 1928.

Megraw, Herbert Ashton.

1. Gold mining in the Southern States: Eng. and Min. Jour., vol. 110, no. 20, pp. 938-940, 1 fig., November, 1920.

Mehl, Maurice Goldsmith. See also Branson, 19, 21; Mather, 2.

1. The use of outline charts in teaching vertebrate paleontology: Denison Univ., Sci. Lab., Bull., vol. 19, pp. 47-53, 4 pls., 1 fig., April, 1919.

Mehl, Maurice Goldsmith—Continued.

2. Some factors in the geographic distribution of petroleum: Denison Univ., Sci. Lab., Bull., vol. 19, pp. 55-63, 2 pls. (maps), April, 1919.
3. The use of models in the interpretation of data for determining the structure of bedded rocks: Denison Univ. Bull., Scientific Laboratories, Jour., vol. 19, pp. 157-167, 1 pl., 6 figs., May, 1920.
4. Some suggestions for indicating drilling operations: Denison Univ. Bull., Scientific Laboratories, Jour., vol. 19, pp. 169-174, 3 figs., May, 1920.
5. The influence of the differential compression of sediments on the attitude of bedded rocks (abstract): Science, new ser., vol. 51, p. 520, May 21, 1920.
6. "Petroliferous provinces": Science, new ser., vol. 51, pp. 541-543, May 28, 1920.
7. A new form of *Diplocaulus*: Jour. Geology, vol. 29, no. 1, pp. 48-56, 2 figs., January-February, 1921.
8. Some suggestions for photographing fossils: Science, new ser., vol. 54, p. 358, October 14, 1921.
9. A new phytosaur from the Trias of Arizona: Jour. Geology, vol. 30, no. 2, pp. 144-157, 3 figs., February-March, 1922.
10. Wind-faceted stones from Wyoming (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, pp. 137-138, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 1, pp. 78-79, February, 1925.
11. Brain of the phytosaurs (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 225, March 30, 1925.
12. Development of a secondary palate in the Phytosauria (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 227, March 30, 1925.
13. Use of the vertebrate fossils in correlation of Triassic beds of the western interior region (abstract): Pan-Am. Geologist, vol. 45, no. 2, p. 174, March, 1926.
14. Amphibian remains from Permian beds of Oklahoma (abstract): Pan-Am. Geologist, vol. 45, no. 3, pp. 252-253, April, 1926.
15. *Trematops thomasi*, a new amphibian species from the Permian of Oklahoma: Jour. Geology, vol. 34, no. 5, pp. 466-474, 5 figs., July-August, 1926.
16. Our world in the making: Science, new ser. vol. 64, pp. 577-578, December 10, 1926. [See Fairchild, 22.]
17. *Apatodonosaurus*, a new genus of ichthyosaurs from the Jurassic of Wyoming: Denison Univ., Bull., vol. 28, no. 2, Sci. Lab., Jour., vol. 23, pp. 111-126, 2 figs., 6 pls., January, 1928; abstract, Geol. Soc. America, Bull., vol. 38, no. 1, pp. 233-234, March 30, 1927.
18. *Pseudopalatus pristinus*, a new genus and species of phytosaurs from Arizona: Missouri, Univ. Studies, vol. 3, no. 1, pp. 3-22, 6 figs., 3 pls., January 1, 1928.
19. The Phytosauria of the Wyoming Triassic: Denison Univ. Bull., vol. 38, no. 8, Sci. Lab., Jour., vol. 23, pp. 141-172, 9 figs., 3 pls., July, 1928.

Meigs, C. C.

1. (and others). Report on Texas alkali lakes: Texas, Univ., Bull., no. 2234, 60 pp., 9 figs., 9 pls., September 8, 1922 [1923].

- Meinzer, Oscar Edward. See also Berkey, 2; Bretz, 5, 14; Clark, W. O. 1; Ellis, A. J., 5; Renick, 10; Twenhofel, 22, 29.
1. Quantitative methods of estimating ground-water supplies: Geol. Soc. America, Bull., vol. 31, no. 2, pp. 329-338, June 30, 1920. Abstract, Geol. Soc. America, Bull., vol. 31, no. 1, p. 156, March 31, 1920; Washington Acad. Sci., Jour., vol. 9, no. 10, pp. 293-294, May 19, 1919.
 2. Hidrología subterránea: Ingeniería Internacional, New York, t. 5, no. 4, pp. 195-202, 10 figs., April, 1921; Bol. Minero, t. 11, no. 6, pp. 837-849, 3 fig., June, 1921.
 3. Ground-water problems in the Hawaiian Island (abstract): Washington Acad. Sci., Jour., vol. 11, no. 17, pp. 424-425, October 19, 1921.
 4. Recent volcanic events on the Island of Hawaii (abstract): Washington Acad. Sci., Jour., vol. 11, no. 17, p. 427, October 19, 1921.
 5. Map of the Pleistocene lakes of the Basin-and-Range province and its significance: Geol. Soc. America, Bull., vol. 33, no. 3, pp. 541-552, 4 figs., September 1, 1922; abstract, with discussion by W. M. Davis, vol. 33, no. 1, pp. 118-120, March 31, 1922.
 6. The occurrence of ground water in the United States, with a discussion of principles: U. S. Geol. Survey, Water-Supply Paper 489, 321 pp., 110 figs., 31 pls. (incl. maps), 1923.
 7. Outline of ground-water hydrology, with definitions: U. S. Geol. Survey, Water-Supply Paper, 494, 71 pp., 35 figs., 1923.
 8. Ground water in Pahsimeroi Valley, Idaho, Bur. Mines and Geology, Pamphlet no. 9, 35 pp., 5 figs., 3 pls., February, 1924 [mimeographed].
 9. (and Dowell, Norah E.). New hydrologic laboratory in the United States Geological Survey (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 106-107, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 152, March, 1924.
 10. Origin of the thermal springs of Nevada, Utah, and southern Idaho: Jour. Geology, vol. 32, no. 4, pp. 295-303, 4 figs., May-June, 1924.
 11. Structure of the rocks and its meaning to drillers: Howell Drillers News, vol. 3, no. 6, pp. 1-2, 6, 3 figs., June, no. 7, pp. 1, 3, 9, July, 1924.
 12. Investigations of ground water in the western part of the United States: Pan-Pacific Sci. Cong., Australia, 1923, vol. 2, pp. 1284-1290 [1924].
 13. [A course of lectures on ground water]: Howell Drillers News, vol. 3, nos. 4-11, April-November, 1924.
 14. (and Hard, Herbert A.). The artesian-water supply of the Dakota sandstone in North Dakota with special reference to the Edgeley quadrangle: U. S. Geol. Survey, Water-Supply Paper 520, pp. 73-95, 2 figs., 2 pls., January 24, 1925.
 15. Artesian water supply of Dakota sandstone (abstract): Pan-Am. Geologist, vol. 43, no. 5, pp. 377-378, June, 1925.
 16. (and Renick, B. Coleman, and Bryan, Kirk). Geology of No. 3 reservoir site of the Carlsbad irrigation project, New Mexico, with reference to water-tightness: U. S. Geol. Survey, Water-Supply Paper 580, pp. 1-39, 2 figs., 2 pls. (incl. map), September 3, 1926.
 17. Large springs in the United States: U. S. Geol. Survey, Water-Supply Paper 557, 94 pp., 23 figs., 17 pls., 1927.
 18. Plants as indicators of ground water: U. S. Geol. Survey, Water-Supply Paper 577, 95 pp., 15 figs., 12 pls., 1927.

Meinzer, Oscar Edward—Continued.

19. Geology of large springs (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 213-216, March 30, 1927.
20. Compressibility and elasticity of artesian aquifers: *Econ. Geology*, vol. 23, no. 3, pp. 263-291, 8 figs., May, 1928; abstract, *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 222, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 150, March, 1928.

Meisel, Max.

1. A bibliography of American natural history; the pioneer century, 1769-1865, vol. 2, 741 pp., Brooklyn, New York, The Premier Publishing Co., 1926.

Meland, Norman. See Reed, R. D., 3.

Melcher, Arles Francis.

1. Determination of pore space of oil and gas sands: *Mining and Metallurgy*, no. 160, pp. 31-32 (abstract), sec. 5, 22 pp., 3 figs., April, 1920; discussion by R. V. A. Mills and C. W. Washburne, *Am. Inst. Min. and Metal Eng., Trans.* [preprint] no. 1038, pp. 51-59, January, 1921; vol. 65, pp. 469-497, 4 figs., 1921.
2. Investigations on permeability and absorption of "sands" for oil, water, and gas, with reference to their normal and possible yield: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 2, p. 143, March-April, 1922.
3. Texture of oil sands with relation to the production of oil: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 6, pp. 716-774, 13 figs., November-December, 1924.
4. Apparatus for determining the absorption and the permeability of oil and gas sands for certain liquids and gases under pressure: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 442-450, 5 figs., May-June, 1925.

Melhase, John.

1. Andalusite in California [Inyo Range]: *Eng. and Min. Jour.-Press*, vol. 120, no. 3, pp. 91-94, 7 figs., July 18, 1925.
2. Asbestos deposits of Arizona: *Eng. and Min. Jour.-Press.*, vol. 120, no. 21, pp. 805-810, 5 figs., November 21, 1925.
3. Mining bentonite in California: *Eng. and Min. Jour.-Press*, vol. 121, no. 21, pp. 837-842, 4 figs., May 22, 1926.
4. Constructing geologic sections with unequal scales: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 7, pp. 755-757, 2 figs., July, 1927.

Melton, Frank Armon. See also Hubbert, 3.

1. The ancestral Rocky Mountains of Colorado and New Mexico: *Jour. Geology*, vol. 33, no. 1, pp. 84-89, 1 fig., January-February, 1925.
2. Interpretation of the isostatic anomaly: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 166-174, 1 fig., August, 1925.
3. Correlation of Permo-Carboniferous red beds in southwestern Colorado and northern New Mexico: *Jour. Geology*, vol. 33, no. 8, pp. 807-815, 1 fig., November-December, 1925.
4. Structural and stratigraphic studies in the Sangre de Cristo Range of Colorado (abstract): *Chicago, Univ., Abstracts of Theses, Sci. Ser.*, vol. 3, pp. 225-229, April, 1927.
5. Jurassic-Cretaceous peneplane in Arkansas, Oklahoma, and Kansas (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 205, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 156, March, 1928.

Melton, Frank Armon—Continued.

6. Unusual aerial photographs from southwestern Arkansas (abstract): Pan-Am. Geologist, vol. 49, no. 2, p. 156, March, 1928; Geol. Soc. America, Bull., vol. 39, no. 1, p. 205, March, 1928.
7. Geology from the air (abstract): Pan-Am. Geologist, vol. 49, no. 2, p. 156, March, 1928; Geol. Soc. America, Bull., vol. 39, no. 1, p. 206, March 30, 1928.
8. (and McGuigan, F. H.). The depth of the base of the Trinity sandstone and the present attitude of the Jurassic peneplain in southern Oklahoma and southwestern Arkansas: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 10, pp. 1005-1014, 3 figs., October, 1928.

Mendenhall, Thomas Corwin.

1. The beginnings of American geology [geological survey of Ohio]: Science, new ser., vol. 56, pp. 661-663, December 8, 1922.

Mendenhall, Walter Curran.

1. Memorial of Grove Karl Gilbert: Geol. Soc. America, Bull., vol. 31, no. 1, pp. 26-64, portr., March 31, 1920.
2. Trends in American geology [notice by T. C.]: Nature, vol. 117, pp. 489-491, April 3, 1926; abstract, Pan-Am. Geologist, vol. 45, no. 2, p. 171, March, 1926.
3. Cooperative geologic surveys in Colorado: Mining and Metallurgy, vol. 7, no. 239, pp. 476-478, November, 1926.
4. Oil possibilities of an area northeast of Petaluma, Sonoma County, California: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 4, p. 425, April, 1927.
5. Volcano stations of the U. S. Geological Survey: Nat. Research Council, Bull. no. 61, pp. 269-271, July, 1927.

Merriam, Clinton Hart.

1. Grove Karl Gilbert, the man: Sierra Club Bull., vol. 10, no. 4, pp. 391-396, portr., January, 1919.
2. William Healey Dall: Science, new ser., vol. 65, pp. 345-347, April 8, 1927; Smithsonian Inst., Ann. Rept., 1927, pp. 563-566, portr., 1928.

Merriam, John Campbell.

1. Tertiary mammalian faunas of the Mohave Desert: California, Univ., Dept. Geology, Bull., vol. 11, no. 5, pp. 437 a-e, 438-585, 253 figs., August 30, 1919.
2. The beginnings of human history read from the geological record; the emergence of man: Sci. Monthly, vol. 9, no. 3, pp. 193-209, 8 figs., September, 1919; vol. 10, no. 4, pp. 321-342, 18 figs., April, 1920; no. 5, pp. 425-437, 11 figs., May, 1920.
3. Earth sciences as the background of history: Geol. Soc. America, Bull., vol. 31, no. 1, pp. 233-246, March 31, 1920.
4. The teaching of historical geology as a factor conditioning research: Geol. Soc. America, Bull., vol. 31, no. 3, pp. 339-349, September 30, 1920.
5. The earth sciences as the background of history: Sci. Monthly, vol. 12, no. 1, pp. 5-17, January, 1921.
6. Origin and history of the bear family in the Western Hemisphere, with particular reference to the relation of this question to problems of geographical history: Nat. Acad. Sci., Proc., vol. 7, no. 7, pp. 183-185, July, 1921.

Merriam, John Campbell—Continued.

7. An outline of progress in paleontological research on the Pacific coast: California, Univ., Dept. Geology, Bull., vol. 12, no. 3, pp. 237-266, August 6, 1921.
8. (and Stock, Chester). Notes on the peccary remains from Rancho La Brea: California, Univ., Dept. Geol. Sci., Bull., vol. 13, no. 2, pp. 9-17, 10 figs., December 22, 1921.
9. (and Stock, Chester). Occurrence of Pleistocene vertebrates in an asphalt deposit near McKittrick, California: Science, new ser., vol. 54, pp. 566-567, December 9, 1921.
10. (and associates). [Report on] continuation of paleontological researches: Carnegie Inst. Washington, Year Book no. 20, 1921, pp. 447-451, February, 1922.
11. Fauna of the Pleistocene asphalt deposits of McKittrick, California (abstract): Science, new ser., vol. 55, pp. 493-494, May 5, 1922.
12. (and others). [Report on] continuation of paleontological researches: Carnegie Inst. Washington, Year Book no. 21, pp. 398-400, January, 1923.
13. The cats of Rancho La Brea [California] (abstract): Washington Acad. Sci., Jour., vol. 13, no. 11, p. 238, June 4, 1923.
14. (and others). [Studies of the John Day region]: Carnegie Inst. Washington, Year Book no. 22, pp. 351-353, 1924.
15. Present status of investigations concerning antiquity of man in California: Science, new ser., vol. 60, pp. 1-2, July 4, 1924.
16. (and others). [Paleontological researches in the Pacific region]: Carnegie Inst. Washington, Year Book no. 23, pp. 293-296, December, 1924.
17. (and Stock, Chester). Relationships and structure of the short-faced bear, *Arctotherium*, from the Pleistocene of California: Carnegie Inst. Washington, Pub. no. 347 (Papers concerning the paleontology of the Pleistocene of California and the Tertiary of Oregon), pp. 1-35, 5 figs., 10 pls., October 8, 1925.
18. (and Stock, Chester). A llama from the Pleistocene of McKittrick, California: Carnegie Inst. Washington, Pub. no. 347 (Papers concerning the paleontology of the Pleistocene of California and the Tertiary of Oregon), pp. 37-42, 4 figs., October 8, 1925.
19. (and Stock, Chester, and Moody, C. L.). The Pliocene Rattlesnake formation and fauna of eastern Oregon, with notes on the geology of the Rattlesnake and Mascall deposits: Carnegie Inst. Washington, Pub. no. 347 (Papers concerning the paleontology of the Pleistocene of California and the Tertiary of Oregon), pp. 43-92, 45 figs., October 8, 1925.
20. (and others). Continuation of paleontological researches: Carnegie Inst. Washington, Year Book no. 24, pp. 258-360, December, 1925.
21. Problem of the Pliocene in the Pacific coast and Great Basin regions (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 156, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, pp. 159-160, March, 1926.
22. (and Stock, Chester). A Pliocene bear from Oregon (abstract): Science, new ser., vol. 64, p. 508, November 19, 1926.
23. The cave of the magic pool [Samwel Cave, Shasta County, California]: Scribner's, vol. 82, no. 3, pp. 264-272, 7 figs., September, 1927.
24. (and Stock, Chester). A hyaenarctid bear from the later Tertiary of the John Day Basin of Oregon: Carnegie Inst. Washington, Pub. 346 (Contributions to Paleontology), pp. 39-44, 1 pl., October, 1927.

Merriam, John Campbell—Continued.

25. (and associates). Continuation of paleontological researches [chiefly investigations on the geology and paleontology of eastern Oregon]: Carnegie Inst. Washington, Yearbook no. 26, pp. 363–366, December, 1927.
26. Doctor Walcott as a paleontologist, and his relations with the Carnegie Institution of Washington: Smithsonian Misc. Coll., vol. 80, no. 12, pp. 5–9, May 12, 1928.
27. (and Gilmore, Charles W.). An ichthyosaurian reptile from marine Cretaceous of Oregon: Carnegie Inst. Washington, Contributions to Palaeontology, Pub. no. 393, pp. 1–4, 1 fig., September, 1928.
28. (and Stock, Chester). A further contribution to the mammalian fauna of the Thousand Creek Pliocene, northwestern Nevada: Carnegie Inst. Washington, Contributions to Palaeontology, Pub. no. 393, pp. 5–21, 14 figs., 3 pls., September, 1928.
29. (and others). Continuation of paleontological researches: Carnegie Inst. Washington, Yearbook no. 27, 1927–28, pp. 384–389, December, 1928.

Merrill, George Perkins, 1854–1929. See also Hovey, 12.

1. The composition and structure of meteorites compared with that of terrestrial rocks: Smithsonian Inst., Ann. Rept., 1917, pp. 175–188, 9 pls., 4 figs., 1919.
2. The percentage number of meteorite falls and finds considered with reference to their varying basicity: Nat. Acad. Sci., Proc., vol. 5, no. 2, pp. 37–39, February, 15, 1919.
3. A heretofore undescribed meteoric stone from Kansas City, Missouri: U. S. Nat. Mus., Proc., vol. 55, pp. 95–96, 2 pls., 1919.
4. Second report on researches on the chemical and mineralogical composition of meteorites: Nat. Acad. Sci., Mem., vol. 14, 4th mem., 15 pp., 5 pls., 4 figs., 1919.
5. The Cumberland Falls meteorite: Science, new ser., vol. 50, p. 90, July 25, 1919.
6. Contributions to a history of American State geological and natural history surveys: U. S. Nat. Mus., Bull. 109, 549 pp., 37 pls. (portraits), 1920.
7. Report on the department of geology: U. S. Nat. Mus., Ann. Rept. 1920, pp. 101–115, 1 pl. 1920.
8. The Cumberland Falls, Whitley County, Kentucky, meteorite: U. S. Nat. Mus., Proc., vol. 57, pp. 97–105, 5 pls., 1 fig. 1920. Abstract, Geol. Soc. America, Bull., vol. 31, no. 1, p. 160, March 31, 1920.
9. Notes on the meteorite of Estherville, Iowa, with special reference to its included "peckhamite" and probable metamorphic nature: U. S. Nat. Mus., Proc., vol. 58, pp. 363–370, 3 pls., 1920.
10. On chondrules and chondritic structure in meteorites: Nat. Acad. Sci., Proc., vol. 6, no. 8, pp. 449–472, 17 figs., 1 pl., August 15, 1920.
11. Obituary, Joseph Paxson Iddings: Am. Jour. Sci., 4th ser., vol. 50, p. 316, October, 1920.
12. A retrospective view of the origin of Meteor Crater, Arizona: Astronomical Soc. Pacific, Pub., vol. 32, no. 189, pp. 259–264, 1 fig. October, 1920.
13. The Cumberland Falls, Whitley County, Kentucky, meteorite: U. S. Nat. Mus., Proc., vol. 57, pp. 97–105, 1 fig., 5 pls., 1920; Kentucky Geol. Survey, ser. 6, vol. 6, pp. 35–51, 8 figs., 1921. Abstract, Geol. Soc. America, Bull., vol. 31, no. 1, p. 160, March 31, 1920.

Merrill, George Perkins—Continued.

14. Report on the department of geology: U. S. Nat. Mus., Ann. Rept., 1921, pp. 81-95, 1 pl., 1921.
15. On the mineral composition and structure of the Troup [Texas] meteorite: U. S. Nat. Mus., Proc., vol. 59, pp. 477-478, 1 pl., 1921.
16. On metamorphism in meteorites: Geol. Soc. America, Bull., vol. 32, no. 4, pp. 395-414, 5 pls., December 1, 1921; abstract, no. 1, pp. 62-63, March 31, 1921.
17. A meteoric iron from Owens Valley, California: Nat. Acad. Sci., Mem., vol. 19, 4th mem., 7 pp., 2 pls., 1922.
18. (assisted by Moodey, M. W., and Wherry, E. T.). Handbook and descriptive catalogue of the collections of gems and precious stones in the United States National Museum: U. S. Nat. Mus., Bull. 118, 225 pp., 26 figs., 14 pls., 1922.
19. On meteoric irons from Alpine, Brewster County, Texas, and Signal Mountain, Lower California, and a pallasite from Cold Bay, Alaska: U. S. Nat. Mus., Proc., vol. 61, art. 4, 4 pp., 2 pls., 1922.
20. New meteorites [Cold Bay, Alaska; Navajo, Arizona]: Am. Jour. Sci., 5th ser., vol. 3, pp. 153-154, February, 1922.
21. A new meteoric iron [Owens Valley, California]: Am. Jour. Sci., 5th ser., vol. 3, p. 225, March, 1922.
22. Meteoric iron from Odessa, Ector County, Texas: Am. Jour. Sci., 5th ser., vol. 3, pp. 335-337, 1 fig., May, 1922.
23. A new meteoric iron [Nickelsville, Scott County, Virginia]: Am. Jour. Sci., 5th ser., vol. 3, p. 386, May, 1922.
24. Observations of falling meteorites: Science, new ser., vol. 55, pp. 675-676, June 23, 1922.
25. Report on the department of geology: U. S. Nat. Mus., Report on the Progress and Condition of the United States National Museum for the year ending June 30, 1922, pp. 75-90, 1922.
26. The department of geology of the U. S. National Museum: Smithsonian Inst., Ann. Rept., 1921, pp. 261-302, 1 fig., 20 pls., 1922.
27. Report on the department of geology: U. S. Nat. Mus., Report on the Progress and Condition of the United States National Museum for the year ending June 30, 1923, pp. 81-96, 1923.
28. A meteoric metabolite from Dungannon, Virginia: U. S. Nat. Mus., Proc., vol. 62, art. 18, 2 pp., 2 pls., 1923.
29. Recently found meteoric irons from Mesa Verde Park, Colorado, and Savannah, Tennessee: U. S. Nat. Mus., Proc., vol. 63, art. 18, 4 pp., 3 pls., 1923.
30. On a recently found meteoric iron from Glasgow, Barren County, Kentucky: Am. Jour. Sci., 5th ser., vol. 5, pp. 63-64, January, 1923.
31. New meteoric irons: Am. Jour. Sci., 5th ser., vol. 5, p. 92, January, 1923.
32. A newly found iron meteorite from Somerset County, Pennsylvania: Am. Jour. Sci., 5th ser., vol. 5, pp. 175-176, February, 1923.
33. The St. John paleontological collection: Am. Jour. Sci., 5th ser., vol. 5, pp. 438-439, May, 1923.
34. A new meteoric iron [McDowell County, North Carolina]: Am. Jour. Sci., 5th ser., vol. 5, p. 519, June, 1923.
35. Report of the department of geology: U. S. Nat. Mus., Report on the Progress and Condition of the United States National Museum for the year ended June 30, 1924, pp. 73-88, 1924.
36. The first one hundred years of American geology. 773 pp., 130 figs., 36 pls., New Haven, Yale University Press, 1924.

Merrill, George Perkins—Continued.

37. Quartz in meteoric stones: *Am. Mineralogist*, vol. 9, no. 5, pp. 112–113, 1 fig., 1924.
38. On a stony meteorite from Anthony, Harper County, Kansas, and a recently found meteoric iron from Mejillones, Chile: *Nat. Acad. Sci., Proc.*, vol. 10, no. 7, pp. 306–312, 5 figs., July, 1924.
39. On a meteoric iron from Four Corners, San Juan County, New Mexico: *Nat. Acad. Sci., Proc.*, vol. 10, no. 7, pp. 312–318, 5 figs., July, 1924.
40. An unrecorded meteorite from Mississippi [Palahatchie, Rankin County]: *Am. Jour. Sci.*, 5th ser., vol. 9, p. 436, May, 1925.
41. A new meteoric stone from Baldwyn, Mississippi: *U. S. Nat. Mus., Proc.*, vol. 67, art. 6, 2 pp., 1 pl., May 22, 1925.
42. Notes on the meteoric stone of Colby, Wisconsin: *U. S. Nat. Mus., Proc.*, vol. 67, art. 2, 3 pp., 1 pl., May 23, 1925.
43. Meteors: *Sci. Monthly*, vol. 21, no. 5, pp. 456–461, November, 1925.
44. Report on the department of geology: *U. S. Nat. Mus., Report on the Progress and Condition of the United States National Museum for the year ended June 30, 1925*, pp. 73–90, 1926.
45. Biographical memoir George Ferdinand Becker, 1847–1919; bibliography compiled by Isabel P. Evans: *Nat. Acad. Sci., Mem.*, vol. 21, 2d mem., 19 pp., portr., 1926.
46. The present condition of knowledge on the composition of meteorites: *Am. Philos. Soc., Proc.*, vol. 65, no. 2, pp. 119–130, 1926.
47. New meteorites [Oakley, Idaho; Forksville, Virginia]: *Am. Jour. Sci.*, 5th ser., vol. 12, p. 532, December, 1926.
48. Report on the department of geology (prepared by R. S. Bassler): *U. S. Nat. Mus., Report on the Progress and Condition of the United States National Museum for the year ended June 30, 1926*, pp. 81–97, 1927.
49. A meteoric iron from Owens Valley, California: *Nat. Acad. Sci., Mem.*, vol. 19, 4th mem., 7 pp., 2 pls., 1927.
50. A stony meteorite from Forksville, Mecklenburg County, Virginia: *U. S. Nat. Mus., Proc.*, vol. 70, art. 21, 4 pp., 3 pls., 1927.
51. Report on the department of geology: *U. S. Nat. Mus., Report on the progress and condition of the United States National Museum for the year ended June 30, 1927*, pp. 85–97, 1927.
52. A recently found iron meteorite from Oakley, Idaho: *U. S. Nat. Mus., Proc.*, vol. 71, art. 21, 3 pp., 2 pls., 1927.
53. Heretofore undescribed meteoric irons from (1) Bolivia, South America, (2) western Arkansas, and (3) Seneca Township, Michigan: *U. S. Nat. Mus., Proc.*, vol. 72, art. 4, 4 pp., 2 pls., 1927.
54. On newly discovered meteoric irons from the Wallapai (Hualapai) Indian Reservation, Arizona: *U. S. Nat. Mus., Proc.*, vol. 72, art. 22, 4 pp., 3 pls., 1927.
55. Two noted mineral collections: *Sci. Monthly*, vol. 25, no. 4, pp. 314–320, 7 figs., October, 1927.
56. Concerning the metal in meteorites (abstract): *Science*, new ser., vol. 66, p. 461, November 11, 1927.
57. Concerning the origin of the metal in meteorites: *U. S. Nat. Mus., Proc.*, vol. 73, art. 21, 7 pp., 3 pls., 1928.
58. Report on the department of geology: *U. S. Nat. Mus., Report on the Progress and Condition of the United States National Museum for the year ended June 30, 1928*, pp. 87–99, 1928.

Merritt, Clifford A. See also Decker, 8; Johannsen, 10.

1. The function of colloids in pegmatitic growths: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 17, sec. 4, pp. 61-68, May, 1923.
2. The function of gels in the formation of quartz and carbonate veins: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 18, sec. 4, pp. 85-90, 2 figs., 1924.
3. Angular inclusions in ore deposits: Econ. Geology, vol. 20, no. 6, pp. 602-604, September-October, 1925.
4. Bigstone and Fox Rivers area, northern Manitoba: Canada, Geol. Survey, Summ. Rept., 1925, pt. B, pp. 27-30, map, 1926.

Merritt, John Wesley.

1. Pennsylvanian sedimentation around Healdton Island [Healdton, Oklahoma]: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 1, pp. 47-52, 4 figs., 1920.
2. Structures of western Chaves County, New Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 1, pp. 53-57, 5 figs., 1920.
3. Structural and metamorphic geology of the Hanover district of New Hampshire: Vermont, State Geologist, Twelfth Rept., 1919-20, pp. 1-36, 1 fig., 13 pls., 1921.
4. (and McDonald, O. G.). Oil and gas in Oklahoma: Oil and gas in Creek County, Oklahoma: Oklahoma Geol. Survey, Bull. no. 40-C, 47 pp., 8 figs., 7 pls. (incl. map), August, 1926.

Mertie, John Beaver, jr. See also Smith, P. S., 7.

1. Repeated stream piracy in the Tolovana and Hess River basins, Alaska (abstract): Washington Acad. Sci., Jour., vol. 9, no. 4, pp. 109-110, February 19, 1919.
2. Platinum-bearing gold placers of the Kahiltna Valley [Alaska]: U. S. Geol. Survey, Bull. 692, pp. 233-264, 1 pl. (map), 1919. Abstract by G. C. Martin, Washington Acad. Sci., Jour., vol. 9, no. 20, p. 633, December 4, 1919.
3. Chromite deposits in Alaska: U. S. Geol. Survey, Bull. 692, pp. 265-267, 1 fig., 1919. Abstract by G. C. Martin, Washington Acad. Sci., Jour., vol. 9, no. 20, pp. 633-634, December 4, 1919.
4. The Salt Chuck palladium-copper mine [Prince of Wales Island, Alaska]: Eng. and Min. Jour., vol. 110, no. 1, pp. 17-20, 6 figs., July 3, 1920.
5. Lode mining in the Juneau and Ketchikan districts [Alaska]: U. S. Geol. Survey, Bull. 714, pp. 105-128, 1 pl., 1921.
6. Notes on the Salmon-Unuk River region [Alaska]: U. S. Geol. Survey, Bull. 714, pp. 129-142, 1 pl. (map), 1921.
7. The occurrence of metalliferous deposits in the Yukon and Kuskokwim regions, Alaska: U. S. Geol. Survey, Bull. 739, pp. 149-165, 1922.
8. Graphic and mechanical computation of thickness of strata and distance to a stratum: U. S. Geol. Survey, Prof. Paper 129, pp. 39-52, 8 figs., 3 pls., March 14, 1922.
9. Igneous rocks [of the Raton, Brilliant, and Koehler quadrangles]: U. S. Geol. Survey, Geol. Atlas U. S., Raton-Brilliant-Koehler folio, New Mexico-Colorado (no. 214), pp. 9-12, 1922.
10. Analysis of structure below an unconformity: Econ. Geology, vol. 17, no. 7, pp. 572-574, 2 figs., November, 1922.
11. (and Harrington, G. L.). The Ruby-Kuskokwim region, Alaska: U. S. Geol. Survey, Bull. 754, 129 pp., 2 figs., 5 pls. (incl. maps), 1924.
12. Geology and gold placers of the Chandalar district [Alaska]: U. S. Geol. Survey, Bull. 773, pp. 215-263, 4 figs., 1 pl., 1925.

Mertie, John Beaver, jr.—Continued.

13. The Paleozoic geology of interior Alaska (abstract): Washington Acad. Sci., Jour., vol. 16, no. 3, pp. 78–79, February 4, 1926.
14. Igneous rocks of the upper Matanuska Valley: U. S. Geol. Survey, Bull. 791, pp. 55–72, 1927.
15. Paleozoic and pre-Cambrian geology of upper Yukon Valley (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 137, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 79, February, 1927.
16. Preliminary report of the Sheenjek River district, Alaska: U. S. Geol. Survey, Bull. 797, pp. 99–123, 1 fig., map, 1928.

Merwin, Herbert E. See also Auroousseau, 3; Davy, 1; Ferguson, J. B., 1, 2; Goldman, 15; Posnjak, 1; Shepherd, 5; Washington, 11, 19, 26, 28, 35; Wyckoff, 5, 6.

1. (and Posnjak, E.). The iron hydroxide minerals (abstract): Washington Acad. Sci., Jour., vol. 9, no. 4, pp. 108–109, February 19, 1919.
2. (and Hostetter, J. C.). Hematite and rutile formed by the action of chlorine at high temperatures: Am. Mineralogist, vol. 4, no. 10, pp. 126–127, 1 fig., October, 1919.
3. Some features of stream development and of glaciation in the Catskill Mountains (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 152, March 31, 1920.
4. Chemical researches on sediments: Geol. Soc. America, Bull., vol. 31, no. 4, pp. 419–423, November 30, 1920; abstract, Washington Acad. Sci., Jour., vol. 11, no. 17, p. 419, October 19, 1921.
5. (and Lombard, R. H., and Allen, E. T.). Cubanite, identity with chalmer-site; magnetic properties: Am. Mineralogist, vol. 8, no. 8, pp. 135–138, August, 1923.
6. (and Locke, Augustus, and Posnjak, E.). Sulphate minerals formed by oxidation of pyritic ore at Bisbee, Arizona (abstract, with discussion by R. C. Wells, Samuel G. Gordon, and R. J. Holden): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 125–126, March 30, 1924; abstract, Pan-Am. Geologist, vol. 41, no. 2, p. 159, March, 1924.
7. Note on the hydrated sulphates of magnesia in hot springs (abstract): Washington Acad. Sci., Jour., vol. 14, no. 15, p. 382, September 19, 1924.

Meserve, Philip W.

1. Note on the depth of the Champlain submergence along the Maine coast: Am. Jour. Sci., 4th ser., vol. 48, pp. 207–208, 1 fig., September, 1919.

Mesler, R. D. See Ulrich, 14.

Metcalf, R. J.

1. Discovery of the Yates pool, Pecos County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 6, p. 635, June, 1927.

Metcalf, Woodbridge.

1. An ancient pine cone [Oakland, California]: Am. Forestry, vol. 29, p. 172, 1 fig., March, 1923.

Meunier, Stanislas.

1. Observations sur deux météorites tombées aux Etats-Unis: Soc. géol. France, Compte rendu Séances, ann. 1921, pp. 145–146, 1921.

Mexico, Departamento del Petróleo.

1. Bibliografía del petróleo en México. Monografías bibliográficas mexicanas, no. 8, 169 pp., Mexico, 1927.

Mexico, Instituto Geológico.

1. Catálogo sistemático de especies minerales de México y sus aplicaciones industriales: Mexico, Inst. Geol., Bol. 40, 290 pp., 1923.
2. Catálogo geográfico de las especies minerales de México: Mexico, Inst. Geol., Bol. no. 41, 152 pp., 1923.

Mexico. Secretaría de Agricultura y Fomento.

1. Atlas geográfico de la República Mexicana construido y editado en la Dirección de Estudios geográficos y climatológicos con la cooperación del Instituto Geológico de México, 1919-1921. Atlas geográfico y geológico. 32 sheets and additional unnumbered sheets including geologic maps of the Republic on the scale 1:6,500,000 and of the individual States on various scales. Other editions omit geologic maps of the individual States.

Meyer, A. M. See Tomlinson, 4.

Meyer, H. C.

1. Zirconia, its occurrence and application: Mineral Foote-Notes, vol. 3, no. 2, pp. 2-12, March-April, 1919.

Meyerhoff, Howard A. See also Colony, 9.

1. The physiography of the Virgin Islands, Culebra, and Vieques: New York Acad. Sci., Scientific Survey of Porto Rico and the Virgin Islands, vol. 4, pts., 1 and 2, pp. 71-219, 55 figs., 4 pls. (incl. maps). 1926-27.
2. Tertiary physiographic development of Porto Rico and the Virgin Islands: Geol. Soc. America, Bull., vol. 38, no. 4, pp. 557-575, 7 figs., December 30, 1927; abstract, no. 1, pp. 141-142, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 150, March, 1927.

Michelson, Albert Abraham.

1. (and Gale, Henry G.). The rigidity of the earth: Jour. Geology, vol. 27, no. 8, pp. 585-601, 8 figs., 1 pl., November-December, 1919.

Michigan Geological and Biological Survey.

1. Catalog and table of contents of the publications of the Geological and Biological Survey division of the Michigan Department of Conservation, with a list of publications of the United States Geological Survey, relating to Michigan; 1838-1922. 36 pp., 1 pl. [1923].

Mijares, Carlos G.

1. Las publicaciones del Instituto geológico de México: Mexico, Inst. Geol., Anales, no. 10, 19 pp., 1923.

Millar, William B. See Gillson, 10.

Millard, M. J. See Aurin, 2.

Miller, A. H.

1. Gravity results in the Mackenzie Basin: Am. Jour. Sci., 5th ser., vol. 7, pp. 411-412, May, 1924.
2. Gravity in western Canada: Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 175-187, 2 figs., May, 1927; abstract, p. xcv, 1927.
3. Gravitational methods of geophysical prospecting: Canadian Min. Jour., vol. 49, no. 24, pp. 476-481, 11 figs., June 15, 1928.

Miller, A. K.

1. A new echinoid from the Sundance of west-central Wyoming: Am. Jour. Sci., 5th ser., vol. 16, pp. 143-146, 4 figs., August, 1928.

Miller, Arthur McQuiston, 1861-1929.

1. The geology of Kentucky . . . [with introduction by August F. Foerste]: Kentucky, Dept. Geology and Forestry, Series 5, Bull. 2, xxix, 392 pp., 114 illus. (incl. maps), Frankfort, 1919.
2. The Cumberland Falls meteorite: *Science*, new ser., vol. 49, pp. 541-542, June 6, 1919.
3. The Cumberland Falls meteorite: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 2, pp. 110-114, 2 figs., July 1, 1919.
4. The McCreary County [Kentucky] aerolite (abstract): *Science*, new ser., vol. 50, p. 96, July 25, 1919.
5. Geology of Allen County: Kentucky, Dept. Geology and Forestry, Ser. V. [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 3, pp. 220-242, 8 figs., map, October 1, 1919.
6. Cumberland Falls, Kentucky, meteorite (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1 pp. 159-160, March 31, 1920.
7. Professor Field's use of the term fossil: *Science*, new ser., vol. 52, p. 408, October 29, 1920.
8. Fossils—are they merely “prehistoric,” or must they also be “geologic”? *Science*, new ser., vol. 53, pp. 258-259, March 18, 1921.
9. Nicholasville, Kentucky, well (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 35-36, March 31, 1921.
10. Glacial man in America?: *Pan-Am. Geologist*, vol. 37, no. 2, pp. 107-108, March, 1922.
11. Licks and caves of the lower Ohio Valley as repositories of mammalian remains, including those of man: *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 156-159, March 31, 1922.
12. Meteorite hunting: *Science*, new ser., vol. 56, pp. 249-251, September 1, 1922.
13. Recent cave explorations in Kentucky for animal and human remains: Kentucky Geol. Survey, ser. 6, vol. 10, pp. 107-113, 2 figs., 1923.
14. Meteorites: *Sci. Monthly*, vol. 17, no. 5, pp. 435-448, 7 figs., November, 1923.
15. Faulting in north-central Kentucky (abstract): *Kentucky Acad. Sci., Trans.*, vol. 1, pp. 29-30, 1924.
16. Some historic fish remains (abstract): *Kentucky Acad. Sci., Trans.*, vol. 1, pp. 37-38, 1924.
17. History and present status of opinions in regard to the origin and antiquity of man (abstract): *Kentucky Acad. Sci., Trans.*, vol. 1, pp. 44-46, 1924.
18. The geologic structure which explains the accumulation of oil in the Irvine field (abstract): *Kentucky Acad. Sci., Trans.*, vol. 1, p. 47, 1924.
19. The McCreary County aerolite (abstract): *Kentucky Acad. Sci., Trans.*, vol. 1, p. 71, 1924.
20. Map of the geology of Adair County, Kentucky, by A. M. Miller: Kentucky Geol. Survey, ser. 6, 1924. Scale, 1:62,500.
21. Map of the geology of Woodford County, Kentucky, by A. M. Miller: Kentucky Geol. Survey, ser. 6, 1924. Scale 1:62,500.
22. Geology of Woodford County: Kentucky Geol. Survey, ser. 6, vol. 21, pp. 119-144, 5 figs., 1925.
23. Origin of the prairie: *Science*, new ser., vol. 66, pp. 655-656, December 30, 1927.

Miller, Benjamin LeRoy. See also Bascom, 2; Pennsylvania, 1.

1. Graphite industry of the United States and Canada: Eng. and Min. Jour., vol. 112, no. 6, pp. 207-213, 3 figs., August 6, 1921.
2. Coal resources of the Americas. 24 pp., 14 pls. (incl. map), The Pan American Union, Washington, Government Printing Office, 1923.
3. Lead and zinc ores of Pennsylvania: Pennsylvania Geol. Survey, 4th ser., Bull. M5, 91 pp., 7 figs. (maps), 5 pls., 1924.
4. Limestones of Pennsylvania: Pennsylvania Geol. Survey, 4th ser., Bull. M7, 368 pp., 7 figs., 15 pls. (incl. map), 1925.
5. Mineral resources of the Allentown quadrangle, Pennsylvania: Pennsylvania Geol. Survey, 4th ser., Topog. and Geol. Atlas, no. 206, Allentown quadrangle, 195 pp., 2 figs., 11 pls., 4 maps, 1925.
6. The physiography, geology, and mineral resources of Kent County: Maryland Geol. Survey, Kent County, pp. 25-109, 3 maps, 1926.
7. The physiography, geology, and mineral resources of Queen Annes County: Maryland Geol. Survey, Queen Annes County, pp. 25-91, 2 maps, 1926.
8. The physiography, geology, and mineral resources of Talbot County: Maryland Geol. Survey, Talbot County, pp. 23-96, 5 pls., map, 1926.
9. Taconic folding in Pennsylvania (with discussion by Henry B. Kümmel, I. C. White, George H. Ashley, James F. Kemp, H. N. Eaton, Bradford Willard, Charles H. Behre, jr., and U. S. Grant): Geol. Soc. America, Bull., vol. 37, no. 3, pp. 497-511, September 30, 1926, abstract, vol. 36, no. 1, p. 157, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 152, March, 1925.
10. An unusual case of limestone decomposition (abstract): Pennsylvania Acad. Sci., Proc., vol. 1, pp. 77-78, 1926.
11. The origin and utilization of the Cambro-Ordovician limestones of Pennsylvania: Pennsylvania Acad. Sci., Proc., vol. 1, pp. 89-99, 1 pl. (map), 1926.
12. Progress in ore genesis studies, 1876-1926: Johns Hopkins Univ., Studies in Geology, no. 8, pp. 121-135, 1927.
13. Origin and utilization of the limestones: West Virginia Acad. Sci., Proc., vol. 2 (W. Va. Univ. Bull., ser. no. 29, no. 1), pp. 102-106, August, 1928.

Miller, Eric R. See Winchell, A. N., 1, 4.

Miller, Gerrit Smith, jr.

1. (and Gidley, J. W.). A new fossil rodent [*Ischromys*] from the Oligocene of South Dakota: Jour. Mammalogy, vol. 1, no. 2, pp. 73-74, February, 1920.
2. Notes on the casts of the *Pithecanthropus* molars: Am. Mus. Nat. Hist., Bull., vol. 48, pp. 527-530, 2 figs., 1923.

Miller, Loye Holmes.

1. Asphalt beds of Rancho La Brea [California] (abstract): Washington Acad. Sci., Jour., vol. 11, pp. 262-263, June 4, 1921.
2. The birds of Rancho La Brea [California]: Carnegie Inst. Washington, Pub. no. 349 (Studies on the fossil flora and fauna of the western United States), pp. 63-106, 20 figs., 6 pls., August, 1925.
3. Avian remains from the Miocene of Lompoc, California: Carnegie Inst. Washington, Pub. no. 349 (Studies on the fossil flora and fauna of the western United States), pp. 107-117, 1 fig., 9 pls., August, 1925.
4. Bird remains [from asphalt pit, Carpinteria, Santa Barbara County, California]: Science, new ser., vol. 66, p. 156, August 12, 1927.

Miller, Raymond. See Kentucky G. S., 49; Murphy, 1.

Miller, Thomas I.

1. Memorial of Joseph Parker Wintringham: *Am. Mineralogist*, vol. 12, no. 3, pp. 70-71, 1 fig. (portr.), March, 1927.

Miller, Wendell Z.

1. The Burbank field, Osage County, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 4, p. 502, July-August, 1921.

Miller, Willet Green, 1866-1925.

1. The pre-Cambrian of central Canada (abstract): *Geol. Mag.*, new ser., dec. 6, vol. 6, pp. 524-526, November, 1919.
2. (and Knight, Cyril W.). Certain post-Timiskaming igneous rocks of Ontario for which the name Haileyburian is proposed: *Canadian Min. Jour.*, vol. 41, p. 653, August 13, 1920.
3. (and Knight, Cyril W.). Haileyburian intrusive rocks: *Ontario Dept. Mines, 29th Ann. Rept.*, vol. 29, pt. 1, pp. 235-236, 1920.
4. The pre-Cambrian of central Canada (abstract): *British Assoc. Adv. Sci.*, Rept. 87th meeting, pp. 192-194, 1920.
5. Geology's debt to the mineral industry: *Science*, new ser., vol. 57, pp. 247-252, March 2, 1923; *Min. Mag.*, vol. 28, no. 5, pp. 311-314, May, 1923.
6. The Matachewan series and its pre-Cambrian relations [northeastern Ontario]: *Canadian Min. Jour.*, vol. 44, no. 16, pp. 298-299, April 20, 1923.
7. Ontario's triumvirate of great mining areas; a remarkable triangle: *Canadian Min. Jour.*, vol. 44, no. 25, pp. 470-471, 1 fig., June 22, 1923.
8. Geology of northeastern Ontario: *Canadian Min. Jour.*, vol. 44, no. 33, pp. 622-625, 4 figs., August 17, 1923.
9. Discovery and development of Cobalt [Ontario]: *Mining and Metallurgy*, vol. 4, no. 201, pp. 475-477, September, 1923.
10. The Sudbury-Cobalt-Porcupine area [Ontario]: *Mining and Metallurgy*, vol. 4, no. 202, pp. 523-525, October, 1923.
11. Uranium minerals in Haliburton district, Ontario: *Canadian Min. Jour.*, vol. 45, no. 2, p. 44, January 11, 1924.
12. Pre-Cambrian rocks of Canada (abstract): *Pan-Am. Geologist*, vol. 42, no. 1, pp. 76-78, August, 1924; *British Assoc. Adv. Sci.*, Rept. 92d Meeting, pp. 386-387, 1925.

Miller, William John. See also Foye, 5; Grout, 9.

1. Geology of the Lake Placid quadrangle: *New York State Mus., Bull.* nos. 211, 212, 106 pp., 30 pls., 8 figs., map, 1919.
2. Geology of the Schroon Lake quadrangle: *New York State Mus., Bull.* no. 213, 214, 102 pp., 14 pls., 9 figs., map, 1919.
3. Pegmatite, sillexite, and aplite of northern New York: *Jour. Geology*, vol. 27, no. 1, pp. 28-54, 11 figs., January-February, 1919. Abstract, *Geol. Soc. America, Bull.*, vol. 30, p. 93, March 31, 1919.
4. Sillexite, a new rock name: *Science*, new ser., vol. 49, p. 149, February 7, 1919.
5. Magnetic iron ore deposits of Clinton County, New York (abstract): *Geol. Soc. America, Bull.*, vol. 30, pp. 93-94, March 31, 1919.
6. Significance of the gorge at Little Falls, New York: *Jour. Geography*, vol. 18, no. 4, pp. 156-158, April, 1919.
7. Magnetic iron ores of Clinton County, New York: *Econ. Geology*, vol. 14, no. 7, pp. 509-535, 2 pls., 1 fig., November, 1919.

Miller, William John—Continued.

8. How the Adirondacks were made: *The Conservationist*, Albany, N. Y., vol. 3, no. 3, pp. 35-38, 4 figs., March, 1920.
9. Anorthosite gabbro in northern New York (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 140-141, March 31, 1920.
10. The geological history of the Connecticut Valley of Massachusetts; a popular account of its rocks and origin. 74 pp., 27 figs., map, [Northampton, Mass., The Hampshire Bookshop, 1921].
11. Features of a body of anorthosite gabbro in northern New York: *Jour. Geology*, vol. 29, no. 1, pp. 29-47, 7 figs., January-February, 1921.
12. Some crystal localities in St. Lawrence County, New York: *Am. Mineralogist*, vol. 6, no. 4, pp. 77-79, April, 1921.
13. Origin of Adirondack magnetite deposits: *Econ. Geology*, vol. 16, no. 3, pp. 227-233, April-May, 1921. Abstract, *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 63-64, March 31, 1921.
14. Wilmington Notch [Adirondacks, New York]: *The Conservationist* (published by Conservation Commission, State of New York), vol. 4, no. 7, pp. 99-101, 3 figs., July, 1921.
15. *Geology, the science of the earth's crust*. Popular Science Library, vol. 3, 384 pp., 80 figs., 20 pls., New York, P. F. Collier & Son Company, 1922.
16. Sillimanite-schist inclusions in granite (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 130-133, 1 fig., March 31, 1922.
17. Intraformational corrugated rocks: *Jour. Geology*, vol. 30, no. 7, pp. 587-610, 10 figs., October-November, 1922; abstract with discussion by James H. Lees: *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 98, March 31, 1922.
18. Discussion of paper by F. L. Nason on The sedimentary phases of the Adirondack magnetic iron ores: *Econ. Geology*, vol. 17, no. 8, pp. 709-713, 1922.
19. *Geology of the Luzerne quadrangle*: *New York State Mus. Bull.*, nos. 245, 246, 66 pp., 14 figs., 11 pls., 1923.
20. *Zion Canyon National Park, Utah*: *Jour. Geography*, vol. 22, no. 5, pp. 161-171, 7 figs., May, 1923.
21. Pre-Cambrian folding in North America: *Geol. Soc. America, Bull.*, vol. 34, no. 4, pp. 679-702, December 30, 1923.
22. An introduction to physical geology with special reference to North America. 435 pp., 351 figs., 1924.
23. The geological history of New York State [second edition]: *New York State Mus. Bull.*, no. 255, 148 pp., 39 figs. (incl. map), 52 pls., 1924.
24. An introduction to geology (physical and historical): Part I, An introduction to physical geology, 435 pp., 351 figs.; Part II, An introduction to historical geology, 399 pp., 238 figs., New York, D. Van Nostrand Company, 1925.
25. Remarkable Adirondack glacial lake: *Geol. Soc. America, Bull.*, vol. 36, no. 3, pp. 513-520, 1 fig., September 30, 1925; abstract, no. 1, p. 162, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 155, March, 1925.
26. *Geology of the Lyon Mountain quadrangle*: *New York State Mus. Bull.*, no. 271, 101 pp., 9 figs., 13 pls., map, 1926.
27. Origin of pyrite deposits of St. Lawrence County, New York: *Econ. Geology*, vol. 21, no. 1, pp. 65-67, January-February, 1926.

Miller, William John—Continued.

28. Glaciation in the San Gabriel Mountains, California: *Jour. Geology*, vol. 34, no. 1, pp. 74-82, 5 figs., January-February, 1926; abstract, *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 180, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 169, March, 1926.
29. Crystalline rocks of the middle-southern San Gabriel Mountains, California (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 149, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 1, p. 96, February, 1926.
30. Present status of the pre-Cambrian geology of northern New York (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 219-220, March 30, 1926.
31. Red Rock Canyon, California: *Jour. Geography*, vol. 25, no. 9, pp. 330-336, 7 figs., December, 1926.
32. An introduction to physical geology, with special reference to North America. 2d ed., 435 pp., 351 illus., New York, D. Van Nostrand Company, 1927.
33. Geomorphology of the southwestern San Gabriel Mountains of California: California, Univ., Dept. Geol. Sci., *Bull.*, vol. 17, no. 6, pp. 193-240, 2 figs., 7 pls., April 21, 1928; abstract, *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 269, March 30, 1928.
34. Anorthosite in Los Angeles County, California (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 164-165, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, pp. 73-74, February, 1928.
35. Geology of Deep Spring Valley, California: *Jour. Geology*, vol. 36, no. 6, pp. 510-525, 8 figs. (incl. map), August-September, 1928; abstract, *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 190, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 144, March, 1928.

Millikan, C. V.

1. Inter-relations of the folds of Osage County, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 4, no. 2, pp. 151-158, 6 figs., 1920.

Millis, John.

1. The drumlins (abstract): *Science*, new ser., vol. 56, p. 174, August 11, 1922.
2. Surface features of the moon, the earth, and Mars: *Popular Astronomy*, vol. 31, no. 1, pp. 1-11, 5 figs., 3 pls., January, 1923.
3. The constructional history of the solar system and of our earth—a speculation. 12 pp., December, 1925. [Priv. pub.]
4. Dualistic hypothesis of earth genesis: *Pan-Am. Geologist*, vol. 45, no. 4, pp. 257-271, May, 1926.

Mills, Enos Abijah.

1. Romance of geology; being adventures with glaciers, rivers, and wind, fossil hunting, trailing ancient seashores, and following mirages of the desert. xii, 245 pp., illus., Garden City, New York, Doubleday, Page & Company, 1926.

Mills, Ronald Van Auken. See also Ambrose, 1; Matteson, 2; Neal, 1; Robinson, H. M., 1; Washburne, 3.

1. (and Wells, Roger C.). The evaporation and concentration of waters associated with petroleum and natural gas: *U. S. Geol. Survey, Bull.* 693, 104 pp., 4 pls., 5 figs., 1919. Abstract, *Washington Acad. Sci., Jour.*, vol. 9, no. 17, pp. 529-530, October 19, 1919.

Mills, Ronald Van Auken—Continued.

2. Experimental studies of subsurface relationships in oil and gas fields: Econ. Geology, vol. 15, no. 5, pp. 398-421, 4 pls., 1 fig., July-August, 1920.
3. Experimental studies of subsurface relationships in oil and gas fields (discussion): Econ. Geology, vol. 16, no. 1, pp. 52-60, January, 1921.
4. Relations of texture and bedding to the movements of oil and water through sands: Econ. Geology, vol. 16, no. 2, pp. 124-141, 2 figs., 4 pls., March, 1921.
5. Natural gas as a factor in oil migration and accumulation in the vicinity of faults (with discussion by Leon J. Pepperberg, F. H. Lahee, and K. C. Heald): Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 1, pp. 14-24, January-February, 1923.

Mills-Bullard, Bess.

1. A summary of oil production in Oklahoma by years: Oklahoma Acad. Sci. (Univ. Oklahoma Bull., new ser., no. 322), Proc., vol. 4, pp. 121-123, 1 pl., December 1, 1925.
2. Oil and gas in Oklahoma; digest of Oklahoma oil and gas fields: Oklahoma Geol. Survey, Bull. no. 40-Q, 187 pp., map, June, 1928; Bull. 40, vol. 1, pp. 101-276, map, July, 1928.

Milner, Henry B.

1. Trinidad; a review of its geology and oil resources: Min. Mag., vol. 25, nos. 3 and 4, pp. 139-148, 205-213, 7 figs., September and October, 1921.
2. Petroleum in Central America and the West Indies: Min. Mag., vol. 27, no. 1, pp. 9-18, 5 figs., July, 1922.
3. The study and correlation of sediments by petrographic methods: Min. Mag., vol. 28, no. 2, pp. 80-92, 2 figs., 2 pls., February, 1923.
4. The oil fields of the Los Angeles Basin, southern California: Min. Mag., vol. 29, no. 6, pp. 329-336, 5 figs., December, 1923, vol. 30, no. 1, pp. 9-16, 5 figs., January, 1924.
5. Report of research on sedimentary rocks by British petrologists for the year 1927: Nat. Research Council, Reprint and Circ. Ser., no. 85, pp. 9-12, 1928.

Minor, H. E.

1. Chemical relation of salt dome waters: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, pp. 38-41, 1 fig., 2 pls., January-February, 1925; Geology of salt dome oil fields, pp. 777-780, 1 fig., 2 pls., 1926.
2. Goose Creek oil field, Harris County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 286-297, 4 figs., March-April, 1925; Geology of salt dome oil fields, pp. 546-557, 4 figs., 1926.
3. The Edgerly oil field, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 3, pp. 497-504, 4 figs. May-June, 1925; Geology of salt dome oil fields, pp. 470-477, 4 figs., 1926.

Minor, Roy Waldo. See also Gregory, W. K., 9.

1. The pectoral limb of *Eryops* and other primitive tetrapods: Am. Mus. Nat. Hist., Bull., vol. 51, pp. 145-312, 104 figs., January 16, 1925.
2. A fossil myriapod of the genus *Parajulus* from Florissant, Colorado: Am. Mus. Novitates, no. 219, 5 pp., 5 figs., June 18, 1926.

- Miser, Hugh Dinsmore. See also Longwell, 6; Moulton, 8; Purdue, 1; Redwood, 1; Stone, 11; Stose, 1, 16; U. S. Geol. Survey, 14.
1. Manganese deposits of the Batesville district, Arkansas (abstract): Washington Acad. Sci., Jour., vol. 9, no. 13, p. 384, July 19, 1919.
 2. (and Fairchild, J. G.). Hausmannite in the Batesville district, Arkansas: Washington Acad. Sci., Jour., vol. 10, no. 1, pp. 1-8, January 4, 1920.
 3. Mississippian tuff in the Ouachita Mountain region (abstract with discussion by Sidney Powers): Geol. Soc. America, Bull., vol. 31, no. 1, pp. 125-126, March 31, 1920.
 4. Geology and general topographic features of Arkansas. In Ferguson, Jim G., Outlines of Arkansas geology, pp. 21-42, Little Rock, 1920.
 5. Preliminary report on the deposits of manganese ore in the Batesville district, Arkansas: U. S. Geol. Survey, Bull. 715, pp. 93-124, 3 pls. (incl. map), 4 figs., November 15, 1920; abstract, Washington Acad. Sci., Jour., vol. 11, no. 8, p. 194, April 19, 1921.
 6. Mineral resources of the Waynesboro quadrangle, Tennessee: Tennessee State Geol. Survey, Bull. 26, 171 pp., 7 figs., 16 pls. (incl. map), 1921.
 7. Llanoria, the Paleozoic land area in Louisiana and eastern Texas: Am. Jour. Sci., 5th ser., vol. 2, pp. 61-89, 1 fig. (map), August, 1921. Abstract, Geol. Soc. America, Bull., vol. 32, no. 1, pp. 40-41, March 31, 1921; Washington Acad. Sci., Jour., vol. 11, no. 18, pp. 444-445, November 4, 1921.
 8. Deposits of manganese ore in the Batesville district, Arkansas: U. S. Geol. Survey, Bull. 734, 273 pp., 26 figs., 17 pls. (incl. maps), 1922.
 9. (and Ross, C. S.). Peridotite dikes in Scott County, Arkansas: U. S. Geol. Survey, Bull. 735, pp. 271-278, 2 figs., 1 pl., December 22, 1922.
 10. (and Ross, C. S.). Diamond-bearing peridotite in Pike County, Arkansas: Econ. Geology, vol. 17, no. 8, pp. 662-674, 3 figs., 1 pl., December, 1922.
 11. Geology and general topographic features of Arkansas. In Ferguson, Jim G., Minerals in Arkansas, pp. 11-34, Little Rock, Ark., 1922.
 12. (and Ross, Clarence S.). Diamond-bearing peridotite in Pike County, Arkansas: U. S. Geol. Survey, Bull. 735, pp. 279-322, 3 figs., 8 pls. (incl. maps), 1923.
 13. (and Trimble, K. W., and Paige, Sidney). The Rainbow Bridge, Utah: Geog. Rev., vol. 13, no. 4, pp. 518-531, 12 figs., October, 1923.
 14. The San Juan Canyon, southeastern Utah: a geographic and hydrographic reconnaissance: U. S. Geol. Survey, Water-Supply Paper 538, 80 pp., 3 figs., 22 pls. (incl. map), 1924.
 15. Temperature of Oklahoma's deepest well: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 4, pp. 525-526, July-August, 1924.
 16. A new areal geologic map of Oklahoma (abstract): Washington Acad. Sci., Jour., vol. 14, no. 15, p. 382, September 19, 1924.
 17. Geologic structure of San Juan Canyon and adjacent country, Utah: U. S. Geol. Survey, Bull. 751, pp. 115-155, 1 fig., 6 pls. (incl. map), December 10, 1924.
 18. (and Ross, Clarence S.). Diamond-bearing peridotite in Pike County, Arkansas: Smithsonian Inst., Ann. Rept., 1923, pp. 261-272, 3 pls., 1925.
 19. (and Ross, Clarence S.). Volcanic rocks in the Upper Cretaceous of southwestern Arkansas and southeastern Oklahoma: Am. Jour. Sci., 5th ser., vol. 9, no. 2, pp. 113-126, February, 1925.

Miser, Hugh Dinsmore—Continued.

20. Erosion in San Juan Canyon, Utah: *Geol. Soc. America, Bull.*, vol. 36, no. 2, pp. 365-377, 2 figs., 2 pls., June 30, 1925; abstract, no. 1, pp. 138-139, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 1, p. 79, February, 1925.
21. Notes on Paleozoic rocks encountered in a well near Florence, Alabama: *U. S. Geol. Survey, Bull.* 781, pp. 11-12, July, 1925.
22. (and Ross, Clarence S.). Pre-Cambrian rhyolite discovered in well in northwestern Arkansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 7, p. 1115, October, 1925.
23. Tennessee Geological Survey [activities]: *Pan-Am. Geologist*, vol. 44, no. 4, pp. 320-321, November, 1925.
24. Geologic map of Oklahoma: *U. S. Geol. Survey, Geologic Atlas of the United States, State of Oklahoma*, 1926. Scale, 1:500,000.
25. Erosion in the San Juan Canyon, Utah (abstract): *Washington Acad. Sci., Jour.*, vol. 16, no. 3, pp. 68-69, February 4, 1926.
26. Erosion in the San Juan Canyon, Utah (abstract): *Washington Acad. Sci., Jour.*, vol. 17, no. 4, pp. 98-99, February 19, 1927.
27. Lower Cretaceous (Comanche) rocks of southeastern Oklahoma and southwestern Arkansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 5, pp. 443-453, 2 figs., May, 1927.
28. Shapes of stream pebbles in San Juan County, Utah (abstract): *Washington Acad., Sci., Jour.*, vol. 17, no. 10, 270-271, May 19, 1927.
29. (and Honess, C. W.). Age relations of the Carboniferous rocks of the Ouachita Mountains of Oklahoma and Arkansas: *Oklahoma Geol. Survey, Bull.* no. 44, 48 pp., 2 figs., November, 1927.
30. Structure of the Ouachita Mountains of Arkansas and Oklahoma (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 180-181, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 141, March, 1928.
31. Structure of the Ouachita Mountains of Oklahoma and Arkansas (abstract): *Washington Acad. Sci., Jour.*, vol. 18, no. 9, pp. 266-267, May 4, 1928.

Mishler, R. T.

1. Geology of the El Tigre district, Mexico: *Min. and Sci. Press*, vol. 121, pp. 583-591, 6 figs., October 23, 1920.
2. (and Budrow, L. R.). Methods of mining and ore estimation at Lucky Tiger mine [El Tigre, Sonora, Mexico]: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1413, 16 pp., 2 figs., February, 1925.

Mitchell, George D. See Byerly, 6, 7.

Mitchell, Graham John.

1. Ore deposition in the Warren district, Arizona: *Eng. and Min. Jour.*, vol. 109, pp. 874-875, 1 fig., April 10, 1920.
2. Vertical extent of copper ore minerals in the Junction mine, Warren district, Arizona: *Eng. and Min. Jour.*, vol. 109, pp. 1411-1412, 2 figs., June 26, 1920.
3. Effect of erosion on mineralized areas in northern Sonora: *Eng. and Min. Jour.*, vol. 110, no. 23, pp. 1081-1082, December 4, 1920.
4. Replacement copper deposits in the Warren district [Bisbee, Arizona]: *Eng. and Min. Jour.*, vol. 112, no. 7, pp. 246-250, 3 figs., August 13, 1921.

Mitchell, Graham John—Continued.

5. Rate of formation of copper sulphate stalactites: Mining and Metallurgy, no. 170, p. 33, February, 1921; discussion by J. F. Kemp, Am. Inst. Min. and Met. Eng., Trans. [preprint], no. 1073, pp. 46-47, May, 1921; Trans., vol. 66, pp. 64-65, 1922.
6. Antimony in southwestern Arkansas: Eng. and Min. Jour.-Press, vol. 114, no. 11, pp. 455-456, 3 figs., September 9, 1922.
7. Geology of the Ponce district, Porto Rico: New York Acad. Sci., Scientific Survey of Porto Rico and the Virgin Islands, vol. 1, pt. 3, pp. 229-300, 9 figs., 4 pls. (incl. map), 1922.
8. Diamond deposits in Arkansas: Eng. and Min. Jour.-Press, vol. 116, no. 7, pp. 285-287, 5 figs., August 18, 1923.
9. Capping as a guide to copper deposits: Eng. and Min. Jour.-Press, vol. 116, no. 21, pp. 891-893, 5 figs., November 24, 1923.
10. Primary chalcocite at Cananea, Mexico: Eng. and Min. Jour.-Press, vol. 117, no. 22, pp. 880-882, 10 figs., May 31, 1924.
11. Ore injection at the Cananea-Duluth mine [Cananea, Sonora, Mexico]: Eng. and Min. Jour.-Press, vol. 119, no. 2, pp. 45-48, 11 figs, January 10, 1925.
12. The geology of Sonora [Carboniferous deposit]: Science, new ser., vol. 67, p. 373, April 6, 1928.

Mitchell, Guy Elliott.

1. The standing stone forests of Wyoming: Sci. Am., vol. 134, pp. 98-99, 7 figs., February, 1926.

Mitchell, W. G.

1. Certain ore deposits of the Southwest (discussion): Am. Inst. Min. and Met. Eng., Bull. no. 148, p. 735, April, 1919.

Moberg, M. Wilcox.

1. New species of *Coskinolina* and *Dictyoconus?* from Florida: Florida State Geol. Survey, 19th Ann., Rept., pp. 166-170, 3 pls., 1928.

Moffatt, John.

1. The Malagash [Nova Scotia] salt deposits: Canadian Min. Jour., vol. 43, no. 32, p. 530, August 11, 1922.

Moffit, Fred Howard.

1. Mining in Chitina Valley, Alaska: U. S. Geol. Survey, Bull. 714, pp. 189-196, 1921.
2. Geology of the vicinity of Tuxedni Bay, Cook Inlet, Alaska: U. S. Geol. Survey, Bull. 722, pp. 141-147, 1 pl. (map), 1921. Abstract, Washington Acad. Sci., Jour., vol. 12, no. 3, p. 72, February 4, 1922.
3. The Iniskin Bay district [Alaska]: U. S. Geol. Survey, Bull. 739, pp. 117-132, 1 pl. (map), 1922.
4. (and Mertie, J. B., jr.). The Kotsina-Kuskulana district, Alaska: U. S. Geol. Survey, Bull. 745, 149 pp., 8 figs., 19 pls. (incl. maps), 1923.
5. The metalliferous deposits of Chitina Valley, Alaska: U. S. Geol. Survey, Bull. 755, pp. 57-72, 1923.
6. The occurrence of copper on Prince William Sound, Alaska: U. S. Geol. Survey, Bull. 773, pp. 141-158, 1925.
7. The Iniskin-Chinitna Peninsula and the Snug Harbor district, Alaska: U. S. Geol. Survey, Bull. 789, 71 pp., 1 fig., 11 pls. (incl. maps), 1927.

Moffit, Fred Howard—Continued.

8. Mineral industry of Alaska in 1925 and administrative report: U. S. Geol. Survey, Bull. 792, pp. 1-49, 1 fig., 1927.

Mohorovičić, A.

1. A critical review of the seismic instruments used to-day and of the organizations of seismic service: Seismol. Soc. America, Bull., vol. 14, no. 1, pp. 38-59, 1 fig., March, 1924.

Molengraaff, G. A. F.

1. Wegener's continental drift. In Theory of continental drift, pp. 90-92, Am. Assoc. Petroleum Geologists, 1928.

Monahan, Joseph W.

1. Minerals in eastern exposures of the Lockport in New York State: Am. Mineralogist, vol. 13, no. 2, pp. 70-71, February, 1928.

Monnett, Victor E.

1. Topographic criteria of oil-field structure: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 1, pp. 37-41, 1 pl., January-February, 1922.
2. Possible origin of some of the structures of the Mid-Continent oil field: Econ. Geology, vol. 17, no. 3, pp. 194-200, 4 figs., May, 1922.
3. The Finger Lakes of central New York: Am. Jour. Sci., 5th ser., vol. 8, pp. 33-53, 6 figs. (incl. maps), July, 1924.
4. Pre-Paleozoic topography of Oklahoma (abstract): Oklahoma Acad. Sci. (Univ. Oklahoma Bull., new ser., no. 322), Proc., vol. 4, p. 119, Dec. 1, 1925.
5. Detailed geology of the northern part of Murray County, Oklahoma: Oklahoma Acad. Sci., Proc., vol. 6, pt. 2, 1926 (Oklahoma, Univ., Bull., new ser., no. 348), pp. 243-245, January 1, 1927.
6. The "buried hills" as a structural agency: Oklahoma Acad. Sci., Proc., vol. 6, pt. 2, 1926 (Oklahoma, Univ., Bull., new ser., no. 348), pp. 268-272, January 1, 1927.

Monte-Flores, Maximo Macambyra.

1. Rôle of bedrock in the distribution of the hydro-carbons: Mining and Metallurgy, no. 157, sec. 1, p. 47 (abstract), sec. 6, 3 pp., 2 figs., January, 1920. Discussion by M. R. Daly, Am. Inst., Min. and Met. Eng. [Trans., preprint no. 988], pp. 16-18, 1920.

Montessus de Ballore, Fernand de.

1. Basis of the geologic theory of earthquakes: Seismol. Soc. America, Bull., vol. 9, no. 1, pp. 8-19, March, 1919.

Montijo, Fernando, jr.

1. The Las Chipas mine [near Arizpe] in Sonora, Mexico: Min. and Sci. Press, vol. 121, pp. 58-60, 1 fig., July 10, 1920.

Montoulieu, Enrique J.

1. Informe técnico sobre un reconocimiento practicado en tierras de la hacienda "Motembo," Coralillo, Provincia de Santa Clara, en relación con informes recibidos por el Gobierno de la República sobre el hallazgo de extensos yacimientos de potasa [potash deposits, Santa Clara province, Cuba]: Cuba, Dirección Montes y Minas, Boletín de Minas, no. 6, pp. 17-23, 1920.
2. Génesis de las corrientes subterráneas de la meseta central de Cuba: Acad. cienc. méd. Habana, Anales, t. 63, pp. 41-71, 1 pl. (map), May-June, 1926.

Moodey, Margaret W. See Merrill, 18.

Moodie, Roy Lee.

1. Bacteriologic and pathologic evidences in past geologic ages: Chicago Pathological Soc., Trans., vol. 10, no. 3, pp. 84-88, October 1, 1916.
2. The influence of disease in the extinction of races: Science, new ser., vol. 45, pp. 63-64, January 19, 1917.
3. Studies in paleopathology; general consideration of the evidence of pathological conditions found among fossil animals: Annals of Medical History, vol. 1, no. 4, pp. 374-393, 20 figs., New York, December, 1917.
4. Pathologic lesions among extinct animals; a study of the evidences of disease millions of years ago: Surgical Clinics of Chicago, vol. 2, no. 2, pp. 318-331, 10 figs., April, 1918.
5. On the parasitism of Carboniferous crinoids: Jour. Parasitology, vol. 4, no. 4, pp. 174-175, June, 1918. Abstract, Am. Soc. Zoologists, Proc., p. 34, December 27, 1917 (not seen); Anatomical Record, Philadelphia, vol. 14, no. 1, pp. 102-103, January 20, 1918.
6. Studies in paleopathology; opisthotonos and allied phenomena among fossil vertebrates: Am. Naturalist, vol. 52, pp. 384-394, 8 figs., August-September, 1918.
7. Studies in paleopathology; pathological evidences of disease among ancient races of man and extinct animals: Surgery, Gynecology, and Obstetrics, vol. 27, no. 5, pp. 498-510, 45 figs., Chicago, November, 1918.
8. Paleopathology: Southern Medical Jour., vol. 12, no. 4, pp. 182-184, April, 1919.
9. Opisthotonos: Science, new ser., vol. 50, pp. 275-276, September 19, 1919.
10. Thread moulds and bacteria in the Devonian: Science, new ser., vol. 51, pp. 14-15, January 2, 1920.
11. Ancient bacteria and the beginnings of disease: Sci. Monthly, vol. 11, no. 4, pp. 362-364, October, 1920.
12. Evolution's most romantic moment: Sci. Monthly, vol. 11, no. 5, pp. 464-469, 5 figs., November, 1920.
13. Stone age man's cure for headache: Sci. Monthly, vol. 12, no. 2, pp. 161-162, 1 fig., February, 1921.
14. Osteomyelitis in the Permian: Science, new ser., vol. 53, p. 333, April 8, 1921.
15. Status of our knowledge of Mesozoic pathology: Geol. Soc. America, Bull., vol. 32, no. 3, pp. 321-325, September 1, 1921.
16. Bacteria in the American Permian: Science, new ser., vol. 54, pp. 194-195, September 2, 1921.
17. Historical sketch of paleopathology (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 197-198, March 31, 1922.
18. Disease and injury among fossil men and the beginnings of surgery: Sci. Monthly, vol. 14, no. 4, pp. 391-394, 3 figs., April, 1922.
19. The paleopathology of the parasuchians: Science, new ser., vol. 56, p. 417, October 13, 1922.
20. The antiquity of disease. 148 pp., 36 figs., Chicago, Illinois, University of Chicago Press, 1923.
21. Paleopathology; an introduction to the study of ancient evidences of disease. 567 pp., 117 figs., and pls., University of Illinois Press, Urbana, Illinois, 1923.

Moodie, Roy Lee—Continued.

22. The paleopathology of the fossil invertebrates: *Science*, new ser., vol. 57, p. 85, January 19, 1923.
23. An unusual form of Pliocene pathology: *Am. Jour. Sci.*, 5th ser., vol. 5, pp. 334-336, 1 fig., April, 1923.
24. Pachyostosis: *Science*, new ser., vol. 58, p. 351, November 2, 1923.
25. A Cretaceous fish spine: *Am. Naturalist*, vol. 60, pp. 290-293, 1 pl., May-June, 1926.
26. Tumors in the Lower Carboniferous: *Science*, new ser., vol. 66, p. 540, December 2, 1927.
27. The ichnology of Texas: *Science*, new ser., vol. 67, pp. 215-216, February 24, 1928.
28. The histological nature of ossified tendons found in dinosaurs: *Am. Mus. Novitates*, no. 311, 2 pp., 6 pls., April 25, 1928.

Moody, C. L. See Merriam, 19.

Mook, Charles Craig. See also Osborn, H. F., 6, 8, 10.

1. Skull characters and affinities of the extinct Florida gavial, *Gavialosuchus americana* (Sellards): *Am. Mus. Nat. Hist., Bull.*, vol. 44, pp. 33-41, 5 pls., April 8, 1921.
2. *Allognathosuchus*, a new genus of Eocene crocodilians: *Am. Mus. Nat. Hist., Bull.*, vol. 44, pp. 105-110, 1 pl., April 13, 1921.
3. Description of a skull of a Bridger crocodilian: *Am. Mus. Nat. Hist., Bull.*, vol. 44, pp. 111-116, 2 pls., April 13, 1921.
4. The skull of *Crocodylus acer* Cope: *Am. Mus. Nat. Hist., Bull.*, vol. 44, pp. 117-121, 2 pls., April 13, 1921.
5. A new species of alligator from the Snake Creek beds [Agate, Nebraska]: *Am. Mus. Novitates*, no. 73, 13 pp., 5 figs., May 8, 1923.
6. A new crocodilian from the Wasatch beds [of Wyoming]: *Am. Mus. Novitates*, no. 137, 4 pp., 2 figs., October 16, 1924.
7. Further notes on the skull characters of *Gavialosuchus americana* (Sellards): *Am. Mus. Novitates*, no. 155, 2 pp., 1 fig., December 30, 1924.
8. A revision of the Mesozoic Crocodilia of North America: *Am. Mus. Nat. Hist., Bull.*, vol. 51, pp. 319-432, 63 figs., 2 pls., April 30, 1925.
9. Note on the occurrence of thrust faulting in western Newfoundland: *Geol. Mag.*, vol. 63, pp. 348-350, 2 figs., August, 1926.

Moon, E. A.

1. (and Bray, H. G.). Differential tilting of the continental shelf off the Atlantic coast of North America: *Science*, new ser., vol. 61, pp. 237-238, February 27, 1925.

Moore, Bernard M. See Buwalda, 19, 24.

Moore, Dudley W.

1. Unusual geological trend in new Kansas oil pool [Woodson County, Kansas]: *Oil Trade*, vol. 16, no. 5, pp. 35-36, 1 fig., May, 1925.

Moore, Elwood S. See also Pennsylvania, 1; Ries, 5; Wheeler, H. A., 3.

1. Iron deposits on the Belcher Islands, Hudson Bay: *Canadian Min. Inst., Bull.* no. 82, pp. 196-206, 4 figs., February, 1919: *Trans.*, vol. 22, pp. 100-111, 4 figs. [1920].
2. Ore deposits of Arctic Canada: *Eng. and Min. Jour.*, vol. 110, no. 9, pp. 396-400, 8 figs., August 28, 1920.

Moore, Elwood S.—Continued.

3. Studies of sedimentation in the universities of the eastern part of the United States (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 19, March 31, 1921.
4. Coal; its properties, analysis, classification, geology, extraction, uses, and distribution. 462 pp., 20 pls., 142 figs., New York, John Wiley & Sons, 1922.
5. [American Association for the Advancement of Science; proceedings of] Section E (Geology and geography): *Science, new ser.*, vol. 57, pp. 112–113, January 26, 1923.
6. (and Taylor, T. G.). The silica refractories of Pennsylvania: *Pennsylvania Geol. Survey, 4th ser., Bull. M3*, 100 pp., 10 figs. (incl. maps), 16 pls., 1924.
7. American Association for the Advancement of Science [Report of meeting of] Section E (Geology and geography): *Science, new ser.*, vol. 59, pp. 89–90, January 25, 1924.
8. The American Association for the Advancement of Science; the section of geology: *Science, new ser.*, vol. 60, p. 250, September 12, 1924.
9. [Proceedings of the American Association for the Advancement of Science], Section E (Geology and geography): *Science, new ser.*, vol. 61, p. 148, February 6, 1925.
10. Gold in quartzite in the Goudreau district, Ontario: *Canadian Min. Jour.*, vol. 46, no. 6, p. 142, February 6, 1925.
11. Some geological conditions controlling the formation of iron deposits in Canada: *Canadian Inst. Min. and Met., Bull. no. 155*, pp. 209–219, March, 1925; *Trans.*, vol. 28, pp. 132–140 [1926].
12. Sources of carbon in the pre-Cambrian formations: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 19, sec. 4, pp. 21–26, 3 pls., 1925.
13. Why coal has cleat and the way in which it runs: *Coal Age*, vol. 27, no. 16, pp. 576–578, 3 figs., April 16, 1925.
14. The geological age of the Homestake ore bodies: *Econ. Geology*, vol. 20, no. 6, pp. 604–605, September–October, 1925.
15. Mississagi Reserve and Goulais River iron ranges, District of Algoma: *Ontario Dept. Mines, 34th Ann. Rept.*, vol. 34, pt. 4, pp. 1–33, illus., map, 1926.
16. A lead and zinc deposit in Keewatin iron formation [Sudbury mining division, Ontario]: *Canadian Inst. Min. and Met., Bull. no. 167*, pp. 371–378, 3 figs., March, 1926.
17. Origin of a Keweenawan boulder conglomerate (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 157, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 160, March, 1926.
18. The Keweenawan series at the eastern end of Lake Superior (abstract): *British Assoc. Adv. Sci., Rept. 94th meeting*, p. 346, 1926; *Jour. Sci. Trans., Oxford*, p. 14, 1926; *Pan-Am. Geologist*, vol. 46, no. 4, p. 320, November, 1926.
19. Batchawana area, District of Algoma: *Ontario Dept. Mines, 35th Ann. Rept.*, vol. 35, pt. 2, pp. 53–85, 17 figs., map, 1927.
20. Sahkatawich (Rush) Lake section, Woman River iron range, District of Sudbury: *Ontario Dept. Mines, 35th Ann. Rept.*, vol. 35, pt. 2, pp. 86–96, 2 figs., map, 1927.
21. (and Maynard, J. E.). Origin of the pre-Cambrian banded iron formations (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 225, March 30, 1928.

Moore, Hastings.

1. (and Snider, L. B.). Stratigraphy of the Weatherford area, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 10, pp. 1024-1026, October, 1928.

Moore, John Irwin.

1. A review of the present knowledge of fossil scorpions with the description of a new species from the Pottsville formation of Clay County, Indiana: Indiana Acad. Sci., Proc. 38th Ann. Meeting, 1922, pp. 125-134, 2 pls., 1923.

Moore, Raymond Cecil. See also Barwick, 1; Birdseye, 1; Chamberlin, T. C., 38; Girty, 2; Glenn, 2; Lee, W. T., 3; Longwell, 6; Panyity, 1; Plummer, 4; Van Tuyl, 2.

1. The stratigraphy of the Kinderhook group in western Illinois and Missouri (abstract): Illinois Acad. Sci., Trans., vol. 9, p. 211 [1917].
2. The Bend series of central Texas (with discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 217-241, 1919.
3. Oil and gas resources of Kansas; Part I, General geology of oil and gas: Kansas, State Geol. Survey, Bull. 6 [pt. 1], 83 pp., 8 pls., 9 figs. [1920].
4. Oil and gas resources of Kansas; Part 2, Geology of Kansas: Kansas, State Geol. Survey, Bull. 6 [pt. 2], 98 pp., 17 pls. (incl. maps), 12 figs., 1920.
5. (and Elledge, Emmett R.). The oil and gas resources of Allen and Neosho counties, Kansas: Kansas State Geol. Survey, Bull. 6, pt. 5, 22 pp., 2 figs., 4 pls. (incl. map) [1920?].
6. (and Boughton, Charles W.). Oil and gas resources of Wilson and Montgomery counties, Kansas: Kansas State Geol. Survey, Bull. 6, pt. 6, 32 pp., 3 figs., 4 pls. (incl. map) [1920?].
7. (and Haynes, Winthrop P.). An outcrop of basic igneous rock in Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 2, pp. 183-187 1920.
8. The relation of the buried granite in Kansas to oil production: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 3, pp. 255-261, 5 figs., 1920.
9. Petroleum resources of Kansas: Mining and Metallurgy, no. 158, sec. 1, p. 43 (abstract), sec. 29, 11 pp., 1 fig., February, 1920; Am. Inst. Min. and Met. Eng., Trans., vol. 65, pp. 97-107, 1 fig., 1921.
10. The relation of mountain folding to the oil and gas fields of southern Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, pp. 32-48, 4 figs., January-February, 1921.
11. Hercynian orogenic movements in southern Oklahoma (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 48, March 31, 1921.
12. On the stratigraphy of northeastern Arizona: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 1, pp. 47-49, January-February, 1922; Min. and Oil Bull., vol. 8, no. 6, pp. 322-323, 326, June, 1922.
13. (and Plummer, F. B.). Pennsylvanian stratigraphy of north central Texas: Jour. Geology, vol. 30, no. 1, pp. 18-42, 4 figs. (incl. maps), January-February, 1922.
14. Buried granite in Kansas (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 96-98, March 31, 1922.
15. Pennsylvanian faunas of north Texas and their correlation (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 199-200, March 31, 1922.

Moore, Raymond Cecil—Continued.

16. Age of the Barnett (lower Bend) shale of central Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 2, pp. 150–153, March–April, 1922.
17. Stratigraphy of a part of southern Utah (with discussion by E. G. Woodruff, J. L. Rich, M. W. Ball, C. W. Tomlinson, Charles Schuchert, and the author): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 3, pp. 199–227, 5 figs., 2 pls., May–June, 1922.
18. Possible oil in southern Utah: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 3, pp. 244–247, 1 fig., May–June, 1922.
19. Stratigraphy of northeastern Arizona: *Min. and Oil Bull.*, vol. 8, no. 6, pp. 322–323, 1 fig., June, 1922.
20. Quantitative criteria in paleogeography (abstract with discussion by C. Schuchert): *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 85–86, March 30, 1923.
21. Structural features of the Colorado Plateau and their origin (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 88–89, March 30, 1923.
22. Physiography of the Paria River valley, southern Utah (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 94, March 30, 1923.
23. Early Mississippian formations of the type region along Mississippi River, in Iowa, Illinois, and Missouri (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 128–129, March 30, 1923.
24. The Shreveport meeting [of the American Association of Petroleum Geologists, March, 1923]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 2, pp. 202–209, March–April, 1923.
25. Geological observations on a traverse through the Grand Canyon of the Colorado (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 85–87, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 143, March, 1924.
26. Geologic report on the inner gorge of the Grand Canyon of Colorado River: *U. S. Geol. Survey, Water-Supply Paper* 556, pp. 125–171, 1 fig., 5 pls., 1925.
27. Fossils from wells in central Kansas: *Kansas State Geol. Survey, Bull.* 10, pp. 94–104, 1925.
28. The Wichita meeting of the American Association of Petroleum Geologists, March 26, 27, 28, 1925: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 678–704, May–June, 1925.
29. Memorial, Glenn Beckley Morgan: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 8, pp. 1220–1221, portr., November, 1925.
30. Origin of enclosed meanders on streams of the Colorado Plateau: *Jour. Geology*, vol. 34, no. 1, pp. 29–57, 11 figs., January–February, 1926.
31. Significance of inclosed meanders in the physiographic history of the Colorado Plateau country: *Jour. Geology*, vol. 34, no. 2, pp. 97–130, 11 figs., February–March, 1926.
32. Early Pennsylvanian deposits west of the Nemaha granite ridge, Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 3, pp. 205–216, 2 figs., 1 pl., March, 1926.
33. The subsidence near Sharon Springs, Kansas: *Science*, new ser., vol. 64, pp. 130–131, August 6, 1926.
34. Note on subsidence near Sharon Springs, Wallace County, Kansas: *Kansas, State Geol. Survey, Bull.* 11, pp. 95–96 [1926].
35. Problems in the history of the Grand Canyon region (abstract): *Washington Acad. Sci., Jour.*, vol. 17, no. 10, pp. 272–274, May 19, 1927.

Moore, Raymond Cecil—Continued.

36. Mississippian corals from a central Kansas well: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 12, pp. 1239-1331, December, 1927.
37. (and Landes, Kenneth K.). Underground resources of Kansas: *Kansas State Geol. Survey, Bull.* 13 (Kansas State Board of Agriculture, Rept. for the quarter ending December, 1926), 154 pp., 115 figs., 1927.
38. Framework of southeastern North America (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 181-182, March, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 141, March, 1928.
39. Pennsylvanian micro-faunas from Oklahoma and Texas (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 292, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 3, pp. 227-228, April, 1928.
40. Paleogeographic significance of graptolite beds of eastern United States (abstract): *Pan-Am. Geologist*, vol. 49, no. 3, p. 228, April, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 292-293, March 30, 1928.
41. Early Mississippian formations in Missouri: *Missouri Bur. Geology and Mines*, second ser., vol. 21, 283 pp., 2 figs., 13 pls., 1928.

Moore, Richard B.

1. Helium, a natural asset: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 69, pp. 110-122, 1923.
2. Measurement of geologic time by atomic disintegration: *Mining and Metallurgy*, vol. 5, no. 210, p. 263, June, 1924.

Moran, Robert B.

1. The rôle of the geologist in the development of the California oil fields: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 1, pp. 73-78, January-February, 1924.

Moreman, W. L.

1. Micrology of the Woodbine, Eagle Ford, and Austin chalk: *Texas, Univ., Bull.* no. 2544, pp. 74-78, 4 pls., 1925.
2. Fossil zones of the Eagle Ford of north Texas: *Jour. Paleontology*, vol. 1, no. 1, pp. 89-101, 1 fig., 4 pls., July, 1927.

Morey, George W.

1. The development of pressure in magmas as a result of crystallization: *Washington Acad. Sci., Jour.*, vol. 12, no. 9, pp. 219-230, 1 fig., May 4, 1922.
2. Relation of crystallization to the water content and vapor pressure of water in a cooling magma: *Jour. Geology* vol. 32, no. 4, pp. 291-295, May-June, 1924.

Morgan, G. B.

1. Areal geology of Wyoming [correlation table and production data]. On reverse of geological map of Wyoming. Published by G. B. Morgan, State Geologist, and C. S. Hill, Commissioner of Immigration, Cheyenne, Wyo. [1919].
2. Activities of the Wyoming Geological Survey and its relationship to the growing mineral industries: *Am. Mining Cong., 23d Ann. Convention, Rept. of Proc.*, pp. 471-476, 1921.
3. Wyoming oil shales: *Am. Mining Cong., 23d Ann. Convention, Rept. of Proc.*, pp. 529-531, 1921.
4. Eleventh biennial report of the State geologist [of Wyoming] for the period October 1, 1920, to and including September 30, 1922. 34 pp., map [Sheridan, Wyo., 1922].

Morgan, George Dillon.

1. A Siluro-Devonian oil horizon in southern Oklahoma: Oklahoma Geol. Survey, Circular no. 10, 13 pp., March, 1922.
2. Arkose of the northern Arbuckle area: Oklahoma Geol. Survey, Circular no. 11, 7 pp., March, 1922.
3. Arkose of the northern Arbuckle area: Oklahoma Acad. Sci., Proc., vol. 2, pp. 87-88 (Oklahoma Univ., Bull. new ser. no. 247), pp. 87-88, October 1, 1922.
4. A Siluro-Devonian oil horizon in southern Oklahoma (abstract): Oklahoma Acad. Sci., Proc., vol. 2 (Oklahoma, Univ., Bull., new ser. no. 247), pp. 88-89, October 1, 1922.
5. Geology of the Stonewall quadrangle, Oklahoma: Bureau of Geology, Bull. no 2, 248 pp., 1 fig., 53 pls. (incl. map), January, 1924.
6. Boggy unconformity and overlap in southern Oklahoma: Bureau of Geology, Norman, Oklahoma, Circular no. 2, 8 pp., 2 pls. (maps), Norman, January, 1924.
7. Stratigraphic position of the Franks and Seminole formations of Oklahoma: Oklahoma Geol. Survey, Circular no. 12, 17 pp., 1 pl., March, 1923.

Morgan, Percy Gates.

1. The so-called "pseudomorphous" quartz of Tertiary gold-silver veins: Econ. Geology, vol. 20, no. 3, pp. 203-207, 1 fig., May, 1925.

Morize, H.

1. A seismograph constructed on a new principle: Seismol. Soc. America, Bull., vol. 11, nos. 3-4, pp. 183-188, 2 figs., September-December, 1921.

Morningstar, Helen.

1. Pottsville fauna of Ohio: Ohio Geol. Survey, 4th ser., Bull. 25, 312 pp., 1 fig., 16 pls., 1922.
2. Catalogue of type fossils in the geological museum at the Ohio State University: Ohio Jour. Sci., vol. 24, no. 1, pp. 31-64, January, 1924.

Morse, Edward Sylvester.

1. On certain fossil shells in the boulder clay of Boston Basin: Am. Jour. Sci., 4th ser., vol. 49, pp. 157-165, 3 figs., March, 1920.

Morse, H. W.

1. (and Locke, Augustus). Recent progress with leached ore capping (with discussion by G. F. Loughlin and H. W. Morse); Econ. Geology, vol. 19, no. 3, pp. 249-258, April-May, 1924.

Morse, Jared Kirtland.

1. Bibliography of crystal structure. xix, 164 pp., illus., Chicago, Ill., University of Chicago Press, c. 1928.

Morse, Paul Franklin, 1897-1929.

1. The bauxite deposits of Mississippi: Mississippi State Geol. Survey, Bull. no. 19, 208 pp., 14 maps, December, 1923.
2. Petroleum prospecting in Mississippi: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 6, pp. 684-695, November-December, 1923.

Morse, Roy R.

1. Oil possibilities along the southern margin of the Black Hills, South Dakota (abstract): Geol. Soc. America, Bull. vol. 31, no. 1, p. 195, March 31, 1920.

Morse, Roy R.—Continued.

2. A note on jointage and the application of the strain ellipsoid: Jour. Geology, vol. 31, no. 8, pp. 669-675, 4 figs., November-December, 1923.
3. Meeting of the Pacific section [of the American Association of Petroleum Geologists, San Francisco, 1925]: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 1, pp. 100-102, January, 1926.

Morse, William Clifford.

1. Appalachian field trip: Science, new ser., vol. 57, pp. 142-143, February 2, 1923.
2. A geological field trip: Science, new ser., vol. 59, pp. 523-524, June 13, 1924.
3. Field trips in geology: Science, new ser., vol. 63, p. 617, June 18, 1926.
4. Paleozoic rocks of Mississippi: Jour. Geology, vol. 36, no. 1, pp. 31-43, 1 fig., January-February, 1928.

Mortimore, Morris E. See Trowbridge, 1.

Morton, Dudley J.

1. Notes on the footprint of *Thinopus antiquus*: Am. Jour. Sci., 5th ser., vol. 12, pp. 409-414, 6 figs., November, 1926.

Moscheles, J.

1. Der Lake Bonneville und das eiszeitliche Klima: Zeitschr. Gletscherkunde, Bd. 12, H. 3-4, pp. 166-167, May, 1922.

Moses, Frederick G. See Dub. 1.

Mosier, Jeremiah George.

1. (and others). De Kalb County soils: Illinois, Univ., Agr. Exper. Sta., Soil Rept. no. 23, 51 pp., map, June, 1922.

Moss, Frank A.

1. Geology of Carson Hill [California]: Eng. and Min. Jour., vol. 124, no. 26, pp. 1010-1012, December 24, 1927.

Mossom, Stuart.

1. A preliminary report on the limestones and marls of Florida: Florida State Geol. Survey, 16th Ann. Rept., pp. 27-203, 7 figs., 52 pls. (incl. map), 1925.
2. A review of the structure and stratigraphy of Florida, with special reference to the petroleum possibilities: Florida State Geol. Survey, 17th Ann. Rept., pp. 169-275, 1 fig. (map), 1926.

Moulton, F. R.

1. The planetesimal hypothesis: Science, new ser., vol. 68, pp. 549-559, December 7, 1928.

Moulton, Gail Francis. See also Fath, 5; Thom, 1; Ward, 14.

1. Oil and gas prospects in southern Perkins County: South Dakota Geol. and Nat. Hist. Survey, Circular 14, 12 pp., 2 figs., December, 1923.
2. Faulting south of Billings, Montana: Jour. Geology, vol. 32, no. 6, pp. 511-523, 7 figs., August-September, 1924.
3. Petroleum development in Illinois during 1924: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1441, 7 pp., March, 1925.
4. Carbon ratios and petroleum in Illinois: Illinois State Geol. Survey, Rept. of Investigations no. 4, 18 pp., 5 figs., 1925.
5. Proper testing for oil structures in Illinois and some areas deserving such testing: Illinois State Geol. Survey, Rept. of Investigations no. 6, 22 pp., 9 figs., 1925.

Moulton, Gail Francis—Continued.

6. Further contributions to the geology of the Allendale oil field, with a revised structure map: Illinois State Geol. Survey, Report of Investigations no. 7, 27 pp., 12 figs., 4 pls. (incl. map), 1925.
7. Some features of red bed bleaching: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 3, pp. 304-311, 3 figs., March, 1926.
8. (and Miser, Hugh D., and Logan, W. N.). Petroleum developments in the Mississippi Valley region during 1925: Am. Inst. Min. and Met. Eng., no. 1570 (Petroleum development and technology in 1925), pp. 643-652, April, 1926; abstract, Mining and Metallurgy, vol. 7, no. 231, p. 137, March, 1926.
9. Oil and gas possibilities near Sparta: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 1, pp. 2-7, map, April 17, 1926.
10. Petroleum developments during 1925 [in Illinois]: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 1, pp. 7-8, April 17, 1926.
11. (and Weller, J. Marvin). Prospecting for Hoing sand oil pools: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 2, pp. 3-4, May 29, 1926.
12. Recent petroleum developments in Illinois: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 2, pp. 5-6, May 29, 1926.
13. The bearing of the structural relations between the Pennsylvanian and older formations on petroleum prospecting in western Illinois: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 3, pp. 1-7, 4 figs., July 24, 1926.
14. Current oil field operations in Illinois: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 3, pp. 10-14, July 24, 1926.
15. Areas for further prospecting near the Martinsville pool, Clark County: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 4, pp. 1-5, 1 fig., August 28, 1926.
16. Oil field water investigations—Waterloo field: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 5, pp. 11-15, 2 figs., October 16, 1926.
17. Petroleum in Illinois during 1926: Illinois State Geol. Survey, Illinois Petroleum, Press Bull. Ser., no. 7, pp. 5-12, February 19, 1927.
18. Plane-table survey underground: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 4, pp. 425-426, April, 1927.
19. New producing horizon in Wabash County: Illinois State Geol. Survey, Illinois Petroleum, Press Bull. Ser., no. 10, p. 12, July 23, 1927; Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 9, p. 991, September, 1927.
20. Important new developments in southwestern Indiana: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 9, pp. 991-992, September, 1927.
21. Deeper production in the Allendale oil field: Illinois State Geol. Survey, Illinois Petroleum, Press Bull. Ser., no. 12, 2 figs., September 24, 1927.
22. (and Young, Jackson). Structure and prospects of eastern Clark County: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 14, 12 pp., 3 figs., March 17, 1928.
23. Loss of red color of rocks: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 7, pp. 767-769, July, 1928.
24. The Baker, Montana, gas field: Black Hills Engineer, vol. 16, no. 4, pp. 254-259, 3 figs., November, 1928.

Moyer, W. Irwin.

1. The natural gas fields of eastern United States and their probable future life (with discussion by I. C. White and others): Natural Gas Assoc. America, Proc. 15th Ann. Meeting, 1920, pp. 44-59, 2 figs., 1921.

Müllerried, Friedrich K. G.

1. (and Scheuble, Hugo). Ueber die Tätigkeit des Popocatepetl (Mexiko) vom November 1923 bis März 1924: Zeitschr. Vulkanologie, Bd. 9, H. 1, pp. 52-55, 2 pls., August, 1925.
2. Informe preliminar acerca de la geología y zonas petrolíferas de una parte de la región carbonífera de Coahuila y Nuevo León: Mexico, Inst. Geol., Foll. Divulgación, no. 26, 21 pp., 1927.

Mullenburg, Garrett A. See also Cox, G. H., 1.

1. Manganese deposits of Colorado: Colorado Geol. Survey, Bull. 15, 76 pp., 1 pl. (map), 1919.
2. Geology of the Tarryall district, Park County, Colorado: Colorado Geol. Survey, Bull. 31, 64 pp., 10 pls. (incl. map), May, 1925.

Muir, John, 1838-1914.

1. Studies in the Sierra; no. 5, Postglacial denudation: Overland Monthly vol. 13, pp. 393-402 (1874): Sierra Club Bull., vol. 10, no. 4, pp. 414-428, 4 pls., 3 figs., January, 1919.
2. Studies in the Sierra; no. 6, Formation of soils (reprinted from Overland Monthly of December, 1874): Sierra Club Bull. vol. 11, no. 1, pp. 69-85, 5 figs., January, 1920.
3. Studies in the Sierra; no. 7, Mountain building (reprinted from the Overland Monthly of January, 1875): Sierra Club Bull., vol. 11, no. 2, pp. 181-193, 7 figs., January, 1921.

Mulholland, William.

1. The earthquake problem in southern California: Seismol. Soc. America, Bull., vol. 10, no. 4, pp. 289-297, December, 1920.

Muller, Siemon.

1. Mesozoic stratigraphy of Great Basin region (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 317, May, 1928.

Muñoz Lumbier, Manuel.

1. Descripción histórica de la Red Seismológica Nacional: México, Inst. Geol., Bol. no. 18, 69 pp., illus., 1919.
2. Algunos datos sobre las islas mexicanas para contribuir al estudio de sus recursos naturales: México, Inst. Geol., Anales no. 7, 56 pp., 9 pls., 1919.
3. Los temblores de Guatemala: Boletín minero, t. 7, 1-2; México, Departamento de exploraciones y estudios geológicos, Folleto de divulgación no. 1, 4 pp., 1 pl., January-February, 1919.
4. Breves apuntes sobre los fenómenos volcánicos: Bol. Minero, t. 11, no. 1, pp. 35-41, 2 pls., January, 1921.
5. Los temblores de tierra: Bol. Minero, t. 13, no. 3, pp. 320-328, 1 pl., March, 1922.
6. Glosario de voces de geología y geografía física: México, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 11, 61 pp., January, 1924.

Murphy, R. E.

1. (and Miller, R.). Reconnaissance map of the structural and areal geology of McCready County, Kentucky: Kentucky Geological Survey, ser. 6, 1928. Scale 1 inch=1 mile.

Murray, J. C. See also McKenzie, N.

1. Joseph Burr Tyrrell: Eng. and Min. Jour.-Press, vol. 115, no. 6, p. 277, portr., February 10, 1923.
2. Charles Camsell: Eng. and Min. Jour.-Press, vol. 115, no. 10, p. 455, portr., March 10, 1923.

Musser, E. H.

1. Report on the Torrance oil field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 11, no. 3, pp. 5-17, 3 figs., 2 pls., September, 1925.
2. The Rosecrans oil field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 11, no. 5, pp. 5-21, 3 figs., November, 1925.
3. The Richfield oil field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 12, no. 6, pp. 5-18, 2 figs., 3 pls. (incl. map), December, 1926.

Musset, René.

1. La production de la bauxite aux États-Unis: Soc. géol. minér. Bretagne, Bull., t. 2, fasc. 2, pp. 264-273, January, 1922.

Myers, William Marsh.

1. Advantages of oblique illumination in mineragraphy: Am. Mineralogist, vol. 9, no. 9, pp. 177-188, 10 figs., September, 1924.
2. (and Anderson, C. O.). Garnet; its mining, milling, and utilization: U. S., Bur. Mines, Bull. 256, 54 pp., 3 figs., 3 pls., 1925.
3. (and Peck, Albert B.). A fulgurite from South Amboy, New Jersey: Am. Mineralogist, vol. 10, no. 6, pp. 152-155, June, 1925; abstract, Pan.-Am. Geologist, vol. 44, no. 2, pp. 159-160, September, 1925.
4. The mineralogy of some commercial garnets: Am. Jour. Sci., 5th ser., vol. 12, pp. 115-118, August, 1926.

Mylius, Louis Aubrey. See also DeWolf, 4.

1. Oil and gas prospecting in parts of Clark, Coles, Edgar, Douglas, Vermilion, and Champaign counties: Illinois State Geol. Survey, Press Bulletin, 7 pp., 1 fig. (map), July 10, 1920.
2. A restudy of the Staunton gas pool: Illinois State Geol. Survey, Extract from Bull. no. 44, 23 pp., 3 pls. (incl. maps), 1 fig., 1919.
3. Oil and gas in Monroe County, Illinois: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, pp. 87-88, January-February, 1921.
4. Oil possibilities of the Posten School structure, Monroe County, Illinois: Illinois State Geol. Survey, Press Bulletin, November 19, 1921, 3 pp., map.
5. Stratigraphy of the southern half of the La Salle anticline: Illinois State Acad. Sci., Trans., vol. 14, pp. 221-228 [1922].
6. Oil and gas development and possibilities in parts of eastern Illinois: Illinois State Geol. Survey, Extract from Bull. 44, 64 pp., 3 figs., 7 pls. (incl. map), 1923.
7. Oil and gas development and possibilities in east-central Illinois (Clark, Coles, Douglas, Edgar, and parts of adjoining counties: Illinois State Geol. Survey, Bull. no. 54, 205 pp., 13 figs., 31 pls. (incl. maps), 16 tables, 1927.

Naething, Foster S.

1. The Black Range tin district of New Mexico: Min. and Sci. Press, vol. 122, pp. 557-558, 1 fig., April 23, 1921.
2. The Oklahoma-Kansas-Missouri zinc-lead field: Eng. and Min. Jour., vol. 122, no. 16, pp. 604-608, October 16, 1926.
3. Ores of the Joplin region (discussion): Eng. and Min. Jour., vol. 123, no. 14, p. 575, April 2, 1927.

Nakashima, Kinzo.

1. A new method for measuring refractive indices under the microscope: Jour. Geology, vol. 34, no. 3, pp. 235-247, 6 figs., April-May, 1926.

Nash, James Philip.

1. (and others). Road-building materials in Texas: Texas, Univ., Bull. no. 1839, 159 pp., 10 pls., July 10, 1918 [1920?].

Nason, Frank Lewis, 1856-1928. See also Anderson, J. C., 2; DeGolyer, 9; Miller, W. J., 18; Wheeler, H. A., 3.

1. Sedimentary phases of the Adirondack magnetic iron ores: Econ. Geology, vol. 17, no. 8, pp. 633-654, December, 1922.
2. Sedimentary phases of Adirondack magnetites: Econ. Geology, vol. 19, no. 3, pp. 288-295, April-May, 1924.

National Academy of Sciences.

1. Report of the committee of the National Academy of Sciences on Panama Canal slides: Nat. Acad. Sci., Mem., vol. 18, 84 pp., 51 pls., 19 figs., 1924.

National Research Council.

1. Transactions of the American Geophysical Union, fourth annual meeting, April, 1923, Washington, D. C.: Nat. Research Council, Bull., vol. 7, pt. 5, no. 41, 150 pp., January, 1924.

Nattress, Thomas.

1. On the manner of occurrence of potassium nitrate in Oregon: Michigan Acad. Sci., 20th Ann. Rept., pp. 57-58, 1918.

Navarro, Daniel V.

1. Reseña minera del Estado de Jalisco: Bol. minero, t. 22, no. 4, pp. 166-259, 12 pls. (incl. maps), October, 1926.

Neal, Roy O.

1. Petroleum hydrology applied to Mid-Continent field (with discussion by G. S. Rogers and R. Van A. Mills): Am. Inst. Min. Eng., Bull. no. 145, pp. 1-8, January, 1919; Bull. no. 147, pp. 603-606, March, 1919 Trans., vol. 61, pp. 565-579, 1920.

Nebel, Merle Louis. See also Savage, 8.

1. Brown County: Illinois State Geol. Survey, Bull. no. 40, pp. 21-50, 1 pl. (map), 13 figs., 1919.
2. Goodhope and La Harpe quadrangles: Illinois State Geol. Survey, Bull. no. 40, pp. 51-67, 2 pls. (maps), 1 fig., 1919.
3. The basal phases of the Duluth gabbro near Gabamichigami Lake, Minnesota, and its contact effects: Econ. Geology, vol. 14, no. 5, pp. 367-402, 4 pls., 3 figs., August, 1919.

Needham, C. E.

1. Ripley greensands of Mississippi: Pan-Am. Geologist, vol. 50, no. 2, pp. 117-120, September, 1928.

Nelson, Edward William.

1. Lower California and its natural resources: Nat. Acad. Sci., Mem., vol. 16, mem. 1, 194 pp., 35 pls., 1921.

Nelson, N. C.

1. Pseudo-artifacts from the Pliocene of Nebraska: Science, new ser., vol. 67, pp. 316-317, March 23, 1928.

Nelson, Richard Newman. See also Packard, 2.

1. Geology of the hydrographic basin of the upper Santa Ynez River, California: California, Univ., Dept. Geol. Sci., Bull., vol. 15, no. 10, pp. 327-396, 13 figs., 4 pls., May 27, 1925; abstract, Geol. Soc. America, Bull., vol. 35, no. 1, pp. 166-167, March 30, 1924.
2. A contribution to the paleontology of the Martinez Eocene of California: California, Univ., Dept. Geol. Sci., Bull., vol. 15, no. 11, pp. 397-466, 13 pls. (incl. map), September 24, 1925.
3. (and Schenck, Hubert G.). Calcareous Algae in Pacific coast limestones (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 266, March 30, 1928.

Nelson, Wilbur Armistead. See also Butts, 6; Holbrook, 1; Twenhofel, 29.

1. Administrative report of State geologist, 1918: Tennessee State Geol. Survey, Resources of Tennessee, vol. 9, no. 1, pp. 3-22, January, 1919.
2. Administrative report of the State Geologist, 1919: Tennessee State Geol. Survey, Bull. 23 (Pt. 1, Ann. Rept. 1919), pp. 7-29, 1920.
3. Press bulletins for 1919: Probable oil structures in west Tennessee: Probable structure and geology in Reelfoot Lake district, Tennessee, and possibilities for finding oil and gas; Oil possibilities and structure in the western valley of Tennessee; Explorations for oil in Sumner County, Tenn.; Tennessee State Geol. Survey, Bull. 23 (Pt. 1, Ann. Rept. 1919), pp. 30-43, 1920.
4. Notes on the Kentucky-Tennessee oil fields: Tennessee State Geol. Survey, Bull. 23 (Pt. 1, Ann. Rept. 1919), pp. 44-47, 1920.
5. Administrative report of the State geologist, 1920: Tennessee, State Geol. Survey, Bull. 25, pp. 7-45, 1921.
6. Report on the geology and structural features of Benton County as they affect oil and gas possibilities: Tennessee, State Geol. Survey, Bull. 25, pp. 41-45, 1921.
7. Notes on a volcanic ash bed in the Ordovician of middle Tennessee: Tennessee, State Geol. Survey, Bull. 25, pp. 46-48, 1921.
8. Description of oil and gas areas in Tennessee and conditions affecting new areas: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, p. 99 (abstract), no. 6, pp. 645-656, map, November-December, 1921; Tennessee State Geol. Survey, Bull. 25, pp. 49-66, 1921.
9. Mid-Ordovician volcanic ash in Tennessee: Pan-Am. Geologist, vol. 37, no. 3, pp. 251-252, April, 1922.
10. Volcanic ash bed in the Ordovician of Tennessee, Kentucky, and Alabama: Geol. Soc. America, Bull., vol. 33, no. 3, pp. 605-615, September 30, 1922. Abstract, with discussion by Charles Shuchert and others, vol. 33, no. 1, p. 152, March 31, 1922.
11. Administrative report of the State geologist, 1921-22, 45 pp., Nashville Tennessee, 1923.
12. Geologic map of Tennessee. Third edition. Tennessee State Geol. Survey, 1923. Scale 1:500,000.
13. Appalachian bauxite deposits: Geol. Soc. America, Bull., vol. 34, no. 3, pp. 525-539, 4 figs., September 30, 1923.

Nelson, Wilbur Armistead—Continued.

14. Reelfoot—an earthquake lake [western Tennessee]: *Nat. Geog. Mag.*, vol. 45, no. 1, pp. 95-114, 20 figs., January, 1924.
15. Oil developments along the Kentucky-Tennessee line during 1923: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 4, pp. 454-458, July-August, 1924.
16. The oil horizons of Kentucky, northeastern Mississippi, and Tennessee: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 5, pp. 621-631, September-October, 1924.
17. Mascot, Tennessee, zinc area: *Mining and Metallurgy*, vol. 5, no. 214, pp. 469-471, October, 1924; *Am. Inst. Min. and Met. Eng., Trans.*, vol. 71, pp. 289-298; also [preprint] no. 1379, 1924.
18. Ducktown, Tennessee, copper district: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1378, 5 pp., October, 1924; vol. 71, pp. 299-303, 1925.
19. What are Tennessee's mineral resources?: *The South's Development, Manufacturers Record*, vol. 86, no. 24, pt. 2, pp. 414-418, 5 figs., December 11, 1924.
20. The southern Tennessee coal field included in Bledsoe, Cumberland, Franklin, Grundy, Hamilton, Marion, Putnam, Rhea, Sequatchie, Van Buren, Warren, and White counties: Tennessee, Dept. Educ., Div. Geology, Bull. 33-A, 239 pp., 12 figs. (maps), 8 pls., 1925.
21. The coals and geology of the Herbert Domain: Tennessee, Dept. Educ., Div. Geology, Bull. 33-C, 54 pp., 4 pls. (incl. map), 1925.
22. Administrative report of the State geologist, 1923-1924: Tennessee, Division of Geology, Bull. 35, 50 pp., 1925.
23. Two new volcanic-ash horizons in the Stones River group of the Ordovician of Tennessee (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 159, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 153, March, 1925.
24. Observations on different periods of igneous activity at Bauxite, Arkansas (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 167, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 158, March, 1925.
25. Geology and evolution: *Sci. Monthly*, vol. 21, no. 3, pp. 312-316, September, 1925.
26. Topography and geology of the coal field [of Tennessee]: U. S., Bur. Mines, Tech. Paper 356, pp. 1-4, 1 fig., 1926.
27. Volcanic ash deposit in the Ordovician of Virginia (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 149-150, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 1, p. 96, February, 1926.
28. Practical economic value of the service of a State geological survey: *Eng. and Min. Jour.*, vol. 123, no. 16, pp. 640-642, April 16, 1927.
29. Geologic map of Virginia: Virginia Geol. Survey, 1928. Scale 1:500,000.

Nelson, Willard B.

1. Brief physiography. 186 pp., illus., New York, Globe Book Company, 1927.

Ness, John.

1. The search for oil in the west [Alberta and Saskatchewan]: *Canadian Inst. Min. and Met., Monthly Bull.* no. 108, pp. 278-306, 20 figs., April, 1921. *Canadian Min. Jour.*, vol. 42, no. 16, pp. 313-323, 20 figs., April 22, 1921.
2. Canada's northern oil fields: *Oildom*, vol. 13, no. 3, pp. 43-51, illus., March, 1922.

Netzeband, W. F.

1. Relation of fracture zones to ore bodies in the Tri-State district: *Mining and Metallurgy*, vol. 9, no. 262, pp. 446-447, October, 1928.

Neumann, Emm. Ma. S.-Navarro.

1. The Berchmans seismograph: *Seismol. Soc. America, Bull.* vol. 12, no. 1, pp. 24-27, 1 pl., March, 1922.

Neumann, Frank.

1. Some remarks on certain earthquakes of 1925; the problem of determining epicenters: *Seismological Soc. America, Bull.*, vol. 15, no. 2, pp. 114-121, June, 1925.
2. Earthquakes of 1925; the problem of determining epicenters (abstract): *Washington Acad. Sci., Jour.*, vol. 15, no. 13, p. 308, July 19, 1925.
3. The Texas earthquake of July 30, 1925 (abstract): *Seismological Soc. America, Bull.*, vol. 16, no. 2, p. 158, June, 1926.
4. Seismological report, January, February, March, 1925: U. S. Coast and Geod. Survey, Serial no. 328, 48 pp. 1926.
5. (and Service, Jerry H.). Seismological report, April, May, June, 1925: U. S. Coast and Geod. Survey, Serial no. 337, 46 pp., 1926.
6. Seismological report, July, August, September, 1925: U. S. Coast and Geodetic Survey, Serial no. 363, 64 pp., 1926.
7. The need for seismological observatories in the Aleutian Islands: *Nat. Research Council, Bull.* no. 56 (vol. 11, pt. 2), pp. 127-130, November, 1926.
8. Surface wave velocities in North America (abstract): *Pan-Am. Geologist*, vol. 47, no. 4, pp. 316-317, May, 1927.
9. Seismological report, October, November, December, 1925, and supplement for 1924: U. S. Coast and Geod. Survey, Serial no. 388, 119 pp., 2 pls. (maps), 1927.
10. (and Service, Jerry H.). Seismological report, January, February, March, 1926: U. S. Coast and Geod. Survey, Serial no. 395, 52 pp., 1927; April, May, June, 1926, Serial no. 406, 60 pp., 1928.
11. Seismological report, October, November, December, 1926: U. S. Coast and Geodetic Survey, Serial no. 431, 89 pp., 1 fig., 1928.

Neumann, Fred Robert.

1. The southern Appalachian earthquake of October 20, 1924: *Seismol. Soc. America, Bull.*, vol. 14, no. 4, pp. 223-229, 1 fig., December, 1924.
2. Origin of the Cretaceous white clays of South Carolina: *Econ. Geology*, vol. 22, no. 4, pp. 374-387, 4 figs., June-July, 1927.

Neumann, L. Murray. See Twenhofel, 18, 22.

Nevin, Charles Merrick.

1. Albany molding sands of the Hudson Valley: *New York State Mus. Bull.*, no. 263, 81 pp., 26 figs., 1925.
2. (and Trainer, D. W., jr.). Laboratory study in delta building: *Geol. Soc. America, Bull.*, vol. 38, no. 3, pp. 451-458, 6 figs., September 30, 1927; abstract, no. 1, p. 165, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 2, pp. 158-159, March, 1927.

Newcombe, R. B. See also Poindexter, 1.

1. Oil and gas development in Michigan: *Michigan Geol. Survey, Pub.* 37, pp. 141-299, 1928.

Newhouse, W. H. See also Fairbanks, 12.

1. Paragenesis of marcasite: *Econ. Geology*, vol. 20, no. 1, pp. 54-66, 3 figs., January-February, 1925.
2. An examination as to the intergrowth of certain minerals: *Econ. Geology*, vol. 21, no. 1, pp. 68-69, January-February, 1926.
3. Some forms of iron sulphide occurring in coal and other sedimentary rocks: *Jour. Geology*, vol. 35, no. 1, pp. 73-83, January-February, 1927.
4. The equilibrium diagram of pyrrhotite and pentlandite and their relations in natural occurrences: *Econ. Geology*, vol. 22, no. 3, pp. 288-299, 2 figs., May, 1927.
5. Intimate intergrowths and mutual boundaries as proof of contemporaneous deposition: *Econ. Geology*, vol. 22, no. 4, pp. 403-407, June-July, 1927.
6. (and Callahan, W. H.). Two kinds of magnetite?. *Econ. Geology*, vol. 22, no. 6, pp. 629-632, September-October, 1927.
7. (and Buerger, M. J.). Observations on wood tin nodules: *Econ. Geology*, vol. 23, no. 2, pp. 185-192, March-April, 1928.
8. The time sequence of hypogene ore mineral deposition: *Econ. Geology*, vol. 23, no. 6, p. 647-659, September-October, 1928.

Newland, David Hale. See also Cushing, 1; Stone, 11.

1. Magnetic iron ores of Clinton County, New York: *Econ. Geology*, vol. 15, no. 2, pp. 177-180, March, 1920.
2. The mineral resources of the State of New York: *New York State Mus., Bull.*, nos. 223, 224, 315 pp., figs., pls. (maps), 1921.
3. Geology of gypsum and anhydrite: *Econ. Geology*, vol. 16, no. 6, pp. 393-404, September-October, 1921.
4. Relation of gypsum supplies to mining: *Am. Inst. Min. and Met. Eng., Trans.* [preprint], no. 1094, 10 pp., September, 1921; vol. 66, pp. 89-98, 1922; abstract, *Mining and Metallurgy*, no. 177, pp. 51-53, September, 1921.
5. Source of the sulphates in the Salina beds (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 150, March 31, 1922.
6. Paragenesis of martite and magnetite (discussion): *Econ. Geology*, vol. 17, no. 4, pp. 299-302, June-July, 1922.
7. Sedimentary phases of Adirondack magnetites (discussion): *Econ. Geology*, vol. 18, no. 3, pp. 291-296, April-May, 1923.
8. (and Hartnagel, C. A.). The mining and quarry industries of New York for 1925 and 1926: *New York State Mus., Bull.* no. 277, 126 pp., September, 1928.
9. Recent progress in the study of the Salina formation: *Nat. Research Council, Reprint and Circ. Ser.*, no. 85, pp. 36-43, 1928.

Newman, M. A.

1. Nonmetallic minerals of southern California; gypsum: *California State Min. Bur., Mining in California*, vol. 18, no. 5, pp. 230-234, May, 1922.

Newton, Roy F. See Clark, A. F., 1.

Nicholls, William M.

1. Geologic section across the middle Salinas Valley of California from the San Antonio River to San Lorenzo Creek (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 201, March 30, 1925.

Nichols, D. A.

1. Landslides in Canada: Canadian Field-Naturalist, vol. 42, no. 9, pp. 212–216, 4 pls., December, 1928.

Nichols, H. G.

1. (and Uglow, W. L.). British Columbia as a mining province: Min. Mag., vol. 29, no. 2, pp. 73–81, 1 fig., August, 1923.

Nickles, John M.

1. Bibliography of North American geology for 1919–20: U. S. Geol. Survey, Bull. 731, 282 pp., 1922.
2. Geologic literature on North America, 1785–1918; Part I, Bibliography: U. S. Geol. Survey, Bull. 746, 1,167 pp., 1923 [March, 1924]; Part II, Index, Bull. 747, 658 pp., 1924.
3. Bibliography of North American geology for 1921–22: U. S. Geol. Survey, Bull. 758, 273 pp., 1924.
4. Bibliography of North American geology for 1923–1924: U. S. Geol. Survey, Bull. 784, 280 pp., 1927.
5. Bibliography of North American geology for 1925 and 1926: U. S. Geol. Survey, Bull. 802, 286 pp., 1928.

Nicol, John M.

1. Magmas and ore magmas: Eng. and Min. Jour., vol. 122, no. 20, pp. 778–779, November 13, 1926.

Nicolas, Frank J.

1. General index of the reports of the Ontario Bureau of Mines, volumes I to XXV (1891–1916): [Ontario, Dept. Mines], 871 pp., 2 maps, Toronto, 1921.
2. Index to separate reports 1906–1910 and summary reports 1905–1916: Canada, Geol. Survey, 305 pp., 5 maps, 1923.
3. Index to paleontology (geological publications [of the Geological Survey of Canada], 1847–1916): Canada, Geol. Survey, 383 pp., 1925. [Pub. no. 2034.]

Nicolescu, C. P.

1. Wichtige Erdölgebiete der Welt und ihr petrographischer, mineralogischer und paleontologischer Charakter: Internationale Zeitschr. Bohrtechnik, Erdölbergbau, und Geologie, Jg. 35, no. 12, pp. 108–109, June 15, 1927.

Niemi, Signa.

1. Mesabi iron range of Minnesota; a bibliography. 18 pp., Library School, University of Wisconsin, June, 1920.

Nishio, Keijiro.

1. Native copper and silver in the Nonesuch formation, Michigan: Econ. Geol., vol. 14, no. 4, pp. 324–334, 1 pl., 1 fig., June, 1919.

Noble, Levi F. See also Gregory, H. E., 9.

1. Geologic history of the Bright Angel quadrangle, Arizona. Text and 1 fig. on back of topographic sheet, Bright Angel quadrangle, Arizona (Coconino County), U. S. Geol. Survey, 1918.
2. Colemanite in Clark County, Nevada: U. S. Geol. Survey, Bull. 735, pp. 23–39, 2 figs., 3 pls., February 23, 1922.
3. A section of the Paleozoic formations of the Grand Canyon at the Bass trail: U. S. Geol. Survey, Prof. Paper 131, pp. 23–73, 4 figs., 7 pls., August 19, 1922.

Noble, Levi F.—Continued.

4. (and Mansfield, G. R., and others). Nitrate deposits in the Amargosa region, southeastern California: U. S. Geol. Survey, Bull. 724, 99 pp., 7 figs., 35 pls. (incl. maps), 1922.
5. Borate deposits in the Kramer district, Kern County, California: U. S. Geol. Survey, Bull. 785, pp. 45-61, 5 figs., October 5, 1926.
6. Note on a colemanite deposit near Shoshone, California, with a sketch of the geology of a part of Amargosa Valley: U. S. Geol. Survey, Bull. 785, pp. 63-73, 1 fig., October 13, 1926.
7. The San Andreas rift and some other active faults in the desert region of southeastern California: Carnegie Inst. Washington, Year Book no. 25, 1925-26, pp. 415-428, December, 1926; Seismological Society America, Bull., vol. 17, no. 1, pp. 25-39, March, 1927.
8. A section of the Kaibab limestone in Kaibab Gulch, Utah: U. S. Geol. Survey, Prof. Paper 150, pp. 41-60, 1 fig., 3 pls., January 14, 1928.
9. The San Andreas rift in a part of southern California: Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., pp. 394-400, 1928.

Noble, G. K. See Gregory, W. K., 9.

Noé, Adolph Charles.

1. Cycad-like leaves from the Permian of Texas (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 134, March 31, 1921
2. Fossil flora of Braidwood, Illinois: Illinois State Acad. Sci., Trans., vol. 15, pp. 396-397 [1923].
3. The flora of the western Kentucky coal field: Kentucky Geol. Survey, ser. 6, vol. 10, pp. 127-148, 24 figs., 1923.
4. Coal balls: Science, new ser., vol. 57, p. 385, March 30, 1923.
5. A Paleozoic angiosperm: Jour. Geology, vol. 31, no. 4, pp. 344-347, 2 figs., May-June, 1923.
6. Pennsylvanian flora of northern Illinois: Illinois State Geol. Survey, Bull. 52, 113 pp., 45 pls., 1925.
7. Coal balls here and abroad: Illinois State Acad. Sci., Trans., vol. 17, pp. 179-180, 1925.
8. The fossil flora of northern Illinois: Illinois State Acad. Sci., Trans., vol. 18, pp. 206-207, 1925.
9. Dakota sandstone plants from Cimarron County, Oklahoma: Oklahoma Geol. Survey, Bull. no. 34, pp. 93-107, 7 pls., October, 1925.
10. American coal balls (abstract): Science, new ser., vol. 62, p. 524, December 4, 1925.
11. The fossil flora of Harrisburg, Illinois: Illinois State Acad. Sci., Trans., vol. 19, pp. 283-285, 1926.
12. Coal ball studies (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 241, March 30, 1926.
13. Pennsylvanian system of Iowa (abstract): Pan-Am. Geologist, vol. 47, no. 5, pp. 375-376, June, 1927.

Nolan, Thomas B.

1. Potash brines underlying Great Salt Lake Desert, Utah (abstract): Washington Acad. Sci., Jour., vol. 17, no. 10, pp. 274-275, May 19, 1927.
2. Potash brines in the Great Salt Lake Desert, Utah: U. S. Geol. Survey, Bull. 795, pp. 25-44, June 16, 1927.
3. Stratigraphy and structure, Gold Hill quadrangle, Utah (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 183-184, March 30, 1928, Pan-Am. Geologist, vol. 49, no. 2, p. 142, March, 1928.

Nolan, Thomas B.—Continued.

4. A late Paleozoic positive area in Nevada: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 153–161, 3 figs., August, 1928.

Nopcsa, Francis.

1. On the probable habits of the dinosaur *Struthiomimus*: *Annals and Mag. Nat. Hist.*, 9th ser., vol. 10, pp. 152–155, 1 fig., July, 1922.

Nordenskjöld, Otto.

1. Die nordatlantischen Polarinseln: *Handbuch d. regionalen Geologie* (Steinman u. Wilckens), Bd. 4, Abt. 2b, H. 24, 31 pp., 10 figs., 1 pl. (map), Heidelberg, 1921.
2. Polar nature, a general characterization (especially chapter 3, The causes and natural conditions of the Ice Age as illustrated by polar nature to-day, pp. 39–51). In *The geography of the polar regions*: *Am. Geog. Soc.*, Spec. Pub. no. 8, New York, 1928.

Nordstrom, Allan. See also Sundberg, 1.

North, Frederick John.

1. On *Syringothyris* Winchell and certain Carboniferous Brachiopoda referred to *Spiriferina* D'Orbigny: *Geol. Soc. London, Quart. Jour.*, vol. 76, pt. 2, pp. 162–227, 3 pls., 6 figs., November 30, 1920.

North, Lloyd.

1. (and Bridenstine, I. J.). Some notes on iron-depositing bacteria: *Econ. Geology*, vol. 17, no. 5, pp. 393–394, August, 1922.

Northrop, John D.

1. The petroleum resources of the world: *Eng. and Min. Jour.*, vol. 108, pp. 953–955, 1 fig., December 27, 1919; vol. 109, pp. 34–38, 1 fig., January 3, 1920.

Northrop, Stuart Alvord.

1. Beetles from the Fox Hills Cretaceous strata of South Dakota; with an appendix by T. D. A. Cockerell: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 28–38, 1 pl., January, 1928.

Norton, E. A.

1. The inter-relation of soils and geology (abstract): *Illinois State Acad. Sci., Trans.*, vol. 19, p. 245, 1926.

Norton, William Harmon.

1. Wapsipinicon breccias of Iowa: *Iowa Geol. Survey*, vol. 27, pp. 355–547, 48 figs., 10 pls. [1920].
2. The elements of geology. 464 pp., 376 figs., Boston, Ginn and Company [copyright 1905, 1921].
3. Calcareous nodules of Wapsipinicon terrane (abstract): *Pan-Am. Geologist*, vol. 46, no. 5, p. 405, December, 1926.
4. A reconsideration of the age of certain outliers in Linn and Jackson counties: *Iowa Acad. Sci., Proc.*, 1926, vol. 33, pp. 207–211 [1927].
5. New stratigraphic data from Iowa deep wells (abstract): *Pan-Am. Geologist*, vol. 48, no. 2, pp. 156–157, September, 1927.

Nowels, Kenneth B.

1. Preliminary report on water conditions in the First Wall Creek sand, Salt Creek oil field, Wyoming: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 4, pp. 492–504, 3 figs., July–August, 1924.

Nuttall, Winfred Laurence Falkiner.

1. Tertiary Foraminifera from the Naparima region of Trinidad, British West Indies: Geol. Soc. London, Quart. Jour., vol. 84, pt. 1, pp. 57-116, 13 figs., 6 pls., April 30, 1928; abstract, Abstracts of Proc., no. 1161, pp. 50-51, February 10, 1927.
2. Notes on the Tertiary Foraminifera of southern Mexico: Jour. Paleontology, vol. 2, no. 4, pp. 372-376, 1 pl., December, 1928.

Nutting, Perley Gilman.

1. Geochemical relations between petroleum, silica, and water: Econ. Geology, vol. 21, no. 3, pp. 234-242, May, 1926.
2. Pressures in planetary atmospheres: Washington Acad. Sci., Jour., vol. 16, no. 9, pp. 254-258, May 4, 1926.
3. Nature of petroleum filtering earths: Oil and Gas Jour., vol. 27, no. 6, pp. 138, 139, June 28, 1928.
4. Petroleum and the filtering earths: Washington Acad. Sci., Jour., vol. 18, no. 15, pp. 409-414, September 19, 1928.
5. Some geological consequences of the selective adsorption of water and hydrocarbons by silica and silicates: Econ. Geology, vol. 23, no. 7, pp. 773-777, November, 1928.

Nye, S. Spencer. See also Fiedler, 2.

1. Geology of the Cactus Flat reservoir site for the Hope community, New Mexico: New Mexico, State Eng., 8th Bienn. Rept., pp. 179-192, 1 fig. [1928].

Oakes, M. C.

1. Building materials of Oklahoma: Oklahoma Acad. Sci., Proc. vol. 3 (Oklahoma, Univ., Bull., new ser., no. 271), pp. 113-117, October 1, 1923.

Oberföll, L. See Matthes, 1.

Obregón, Mariano B.

1. Carbón y petróleo en los Estados Unidos Mexicanos; sus yacimientos, origen, distribución y manera de utilizarlos: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 43, pp. 157-299, 1924.

Ockerman, John W.

1. Fauna of the Galena limestone near Appleton [Wisconsin]: Wisconsin Acad. Sci., Arts, and Letters, Trans., vol. 22, pp. 99-142, 3 pls., 1926.

O'Connell, Marjorie. See also Brown, B., 1, 2.

1. The Schrammen collection of Cretaceous Silicispongiae in the American Museum of Natural History: Am. Mus. Nat. Hist., Bull., vol. 41, pp. 1-261, 5 figs., 14 pls., map, August 1, 1919.
2. Orthogenetic development of the costae in the Perisphinctinae: Am. Jour. Sci., 4th ser., vol. 48, pp. 450-460, 2 figs., December, 1919. Abstract, Geol. Soc. America, Bull., vol. 30, no. 1, p. 152, March 31, 1919.
3. The Jurassic ammonite fauna of Cuba: Am. Mus. Nat. Hist., Bull., vol. 42, pp. 643-692, 8 figs., 5 pls., 1920.
4. Further studies on the Jurassic of Cuba (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 136, March 31, 1920.
5. New species of ammonite opercula from the Mesozoic rocks of Cuba: Am. Mus. Novitates, no. 28, 15 pp., 18 figs., December 29, 1921.
6. Phylogeny of the ammonite genus *Ochetoceras*: Am. Mus. Nat. Hist., Bull., vol. 46, pp. 387-411, 1922.

O'Connor, J. J.

1. The latent iron-ore resources in Canada lying north of Lake Superior: Canadian Min. Jour., vol. 40, no. 50, pp. 952-953, December 17, 1919.

Odell, William Wallace.

1. (and Hood, O. P.). Possibilities for the commercial utilization of peat: U. S., Bur. Mines, Bull. 253, 160 pp., 23 figs., 6 pls., 1926.

Officer, H. G. See Aurin, 3.

O'Harra, Cleophas Cisney.

1. Lignite coals and their utilization: Pahasapa Quart., vol. 8, no. 2, pp. 16-35, illus., February, 1919.
2. The Badlands: Pahasapa Quart., vol. 9, no. 4, pp. 207-213, 7 figs., June, 1920.
3. The White River Badlands: South Dakota School of Mines, Bull. no. 13, 181 pp., 75 figs., 96 pls. (incl. map), November, 1920.
4. Materials used in the making of Portland cement: Black Hills Engineer, vol. 12, no. 2, pp. 59-64, 1 pl., March, 1924.
5. (and Connolly, Joseph P.). The geology, mineralogy, and scenic features of Custer State Park, South Dakota: South Dakota School of Mines, Bull. no. 14, 123 pp., 5 figs., 60 pls. (incl. maps), January, 1926.

O'Heir, H. B. See Bell, J. M., 9.

Ohern, Daniel Webster.

1. Fifty years of petroleum geology: Johns Hopkins Univ., Studies in Geology, no. 8, pp. 83-120, 1927.

Ohrensall, Robert D. See Wentworth, 38.

Oklahoma Geological Survey.

1. Map showing distribution of mineral resources. 1921. [Scale: 30 miles to 1 inch, about.]
2. Robberson oil and gas field, Garvin County, Oklahoma; Oklahoma Geol. Survey, Press Bulletin no. 10, text and map [1922].

Oldham, Richard Dixon.

1. The depth and twofold character of earthquake origins: Jour. Geology, vol. 34, no. 5, pp. 385-398, July-August, 1926.

Oldroyd, Ida Shepard.

1. Description of a new fossil species of a clam of the genus *Crassatellites* [Pleistocene, near Lomita, Los Angeles County, California]: Southern California Acad. Sci., Bull., vol. 23, pt. 1, p. 10, 1 fig., January-February, 1924.

Oldroyd, Thomas Shaw.

1. New Pleistocene mollusks from California: Nautilus, vol. 34, no. 4, pp. 114-116, 1 pl., April, 1921.
2. Some varieties of western Olivellas: Nautilus, vol. 34, no. 4, pp. 117-119, 1 pl., April, 1921.
3. The fossils of the lower San Pedro fauna of Nob Hill cut, San Pedro, California: U. S. Nat. Mus., Proc., vol. 65, art. 22, 39 pp., 2 pls., 1924.

Olmstead, Seymour G.

1. Economic geology of the Ophir mining district [Utah]: Econ. Geology, vol. 16, no. 7, pp. 433-456, 1 fig., November, 1921.

Olsson, A. A.

1. The Miocene of northern Costa Rica; with notes on its general stratigraphic relations: *Bull. Am. Paleontology*, vol. 9, no. 39, Part I, pp. 1-167, April 21, 1922; Part II, Class Pelecypoda, pp. 169-309, 32 pls., June 21, 1922.

Omori, Fusakichi, 1868-1923.

1. Earthquake zones of the Pacific: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, pp. 369-377, 3 figs., 1921.

O'Neill, John Johnston. See also Bruce, 18.

1. Preliminary report on the economic geology of Hazleton district, British Columbia: Canada, Geol. Survey, Mem. 110, 51 pp., 10 pls., 5 figs., 3 maps, 1919.
2. The platinum situation in Canada, 1918: Canada, Geol. Survey, Summ. Rept., 1918, pt. G, pp. 1-15, map, 1919.
3. Deposits of native copper in Arctic Canada: Canadian Min. Inst., Trans., vol. 22, pp. 406-416, 3 figs. [1920]; Min. and Sci. Press, vol. 118, pp. 807-811, 5 figs., June 14, 1919.
4. Salmon River district, Portland Canal mining division, B. C.: Canada, Geol. Survey, Summ. Rept., 1919, pt. B, pp. 7-12, 1920.
5. The geology of the Arctic coast of Canada west of the Kent Peninsula: Canadian Arctic Expedition 1913-18, Rept., vol. 11, pt. A, 107 pp., 6 figs., 35 pls., 3 maps, July 8, 1924.

Ontario Department of Mines.

1. Ontario's mines and mineral resources. 87 pp., illus., Ontario Department of Mines, Toronto, Canada, 1924.
2. General index to the reports of the Ontario Department of Mines, volumes XXVI to XXXV (1917-1927), 668 pp., 1928.

Ontario Iron Ore Committee.

1. Report of the Ontario iron ore committee, with appendix, 1923: Ontario, Dept. Mines, 306 pp., 52 figs., Toronto, 1924.

Orcutt, Charles Russell.

1. Pleistocene beds of San Quentin Bay, Lower California: *West American Scientist*, vol. 19, no. 3, pp. 23-24, June 15, 1921.

Orcutt, W. W.

1. Early oil development in California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 1, pp. 61-72, January-February, 1924.

Ordóñez, Ezequiel.

1. Petróleo en el sur de Tamaulipas: *Soc. cient. "Antonio Alzate," Mem. y Rev.*, t. 38, nos. 5-8, pp. 257-269, June 1919.
2. Oil in southern Tamaulipas, Mexico (with discussion by V. R. Garfias and E. DeGolyer): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 61, pp. 532-543, 1920.

Orser, Edward H.

1. Kirkland Lake, Ontario's second gold district: *Eng. and Min. Jour.-Press*, vol. 121, no. 8, pp. 317-323, 3 figs., February 20, 1926.

Ortega, Gustavo.

1. Los recursos petrolíferos mexicanos y su actual explotación: Mexico, Secretaría de Industria, Comercio y Trabajo, Dept. de Petrleo, 49 pp., 36 pls., Mexico, 1925.

Ortega, Pablo.

1. (and Huerta, Santiago de la). El carbón de piedra, el petróleo, el asfalto, los betunes, y et gas natural de Cuba: Cuba, Dirección de Montes y Minas, Bol. Bibliog. no. 1, 23 pp., La Habana, 1919.

Orynski, Leonard D. See Edwards, 1.

Osbon, Clarence C. See also Soper, 2.

1. Peat in the Dismal Swamp, Virginia and North Carolina: U. S. Geol. Survey, Bull. 711, pp. 41-59, 3 pls. (incl. map), October 29, 1919. Abstract, Washington Acad. Sci., Jour., vol. 10, no. 20, p. 574, December 4, 1920.
2. Classification and formation of peat and related deposits: Am. Peat Soc., Jour., vol. 14, no. 1, pp. 37-44, 2 pls., January, 1921.

Osborn, Chase Salmon.

1. The earth upsets (another terrestrial motion). 216 pp., Baltimore, Waverly Press, 1927.

Osborn, Henry Fairfield. See also McCornack, 2; Matsumoto, 1.

1. Samuel Wendell Williston: Science, new ser., vol. 49, pp. 274-278, March 21, 1919.
2. Memorial of Samuel Wendell Williston: Geol. Soc. America, Bull., vol. 30, no. 1, pp. 66-76, portr., March 31, 1919.
3. Seventeen skeletons of *Moropus*; probable habits of the animal: Nat. Acad. Sci., Proc., vol. 5, no. 7, pp. 250-252, 1 fig., July 15, 1919.
4. *Paleomastodon*, the ancestor of the long-jawed mastodons only: Nat. Acad. Sci., Proc., vol. 5, no. 7, pp. 265-266, 1 fig., July 15, 1919.
5. *Camarasaurus*, *Amphicoelias*, and other sauropods of Cope: Geol. Soc. America, Bull., vol. 30, pp. 379-388, September 30, 1919.
6. (and Mook, Charles Craig). Characters and restoration of the sauropod genus *Camarasaurus* Cope: Am. Philos. Soc., Proc., vol. 58, no. 6, pp. 386-396, 1 pl., 3 figs., 1919.
7. New titanotheres of the Huerfano: Am. Mus. Nat. Hist., Bull., vol. 41, pp. 557-569, 7 figs., December 10, 1919.
8. (and Mook, Charles Craig). Reconstruction of the skeleton of the sauropod dinosaur *Camarasaurus* Cope (*Morosaurus* Marsh): Nat. Acad. Sci., Proc., vol. 6, no. 1, p. 15, January 15, 1920.
9. The hall of the age of man in the American Museum: Natural History, vol. 20, no. 3, pp. 229-246, 14 figs., May-June, 1920.
10. (and Mook, C. C.). *Camarasaurus*, *Amphicoelias*, and other sauropods of Cope: Am. Mus. Nat. Hist., Mem., new ser., vol. 3, pt. 3, pp. 251-387, 127 figs., 26 pls., January, 1921.
11. The evolution, phylogeny, and classification of the Proboscidea: Am. Mus. Novitates, no. 1, 15 pp., 4 figs., January 31, 1921.
12. The hall of the age of man in the American Museum: Nature, vol. 107, pp. 236-240, 4 figs., April 21, 1921.
13. Resemblances and contrasts between zoologic and paleontologic research in mammalogy; desirability of uniform standards and systems in classification, in description, in measurement, in reasoning: Jour. Mammalogy, vol. 2, no. 1, pp. 1-11, February, 1921.
14. First appearance of the true mastodon in America: Am. Mus. Novitates no. 10, 6 pp., 2 pls., June 15, 1921. Science, new ser., vol. 54, p. 108, August 5, 1921.
15. Adaptive radiation and classification of the Proboscidea: Nat. Acad. Sci., Proc., vol. 7, no. 8, pp. 231-234, 1 fig., August, 1921.

Osborn, Henry Fairfield—Continued.

16. Evolution, phylogeny, and classification of the Mastodontoidea: Geol. Soc. America, Bull., vol. 32, no. 3, pp. 327-332, September 1, 1921.
17. Orthogenesis as observed from paleontological evidence beginning in the year 1889: Am. Naturalist, vol. 56, no. 643, pp. 134-143, March-April, 1922.
18. *Hesperopithecus*, the first anthropoid primate found in America: Am. Mus. Novitates, no. 37, 5 pp., 3 figs., April 25, 1922.
19. (and Reeds, C. A.). Old and new standards of Pleistocene division in relation to the prehistory of man in Europe (with discussion by Frank Leverett, W. C. Alden, and W. M. Davis): Geol. Soc. America, Bull., vol. 33, no. 3, pp. 411-490, 14 figs., July 3, 1922.
20. Species of American Pleistocene mammoths; *Elephas jeffersonii*, new species: Am. Mus. Novitates, no. 41, 16 pp., 12 figs., July 8, 1922.
21. *Hesperopithecus*, the first anthropoid primate found in America: Science, new ser., vol. 55, pp. 463-465, May 5, 1922; Nat. Acad. Sci., Proc., vol. 8, no. 8, pp. 245-246, August, 1922.
22. *Hesperopithecus*, the anthropoid primate of western Nebraska: Nature, vol. 110, pp. 281-283, 2 figs., August 26, 1922.
23. (and Reeds, C. A.). Recent discoveries on the antiquity of man: Nat. Acad. Sci., Proc., vol. 8, no. 8, pp. 246-247, August, 1922; Science, new ser., vol. 56, p. 256, September 1, 1922.
24. Migrations and affinities of the fossil proboscideans of Eurasia, North and South America, and Africa: Am. Naturalist, vol. 56, no. 646, pp. 448-455, 1 fig., September-October, 1922.
25. *Dibelodon edensis* (Frick) of southern California; *Miomastodon* of the middle Miocene, new genus: Am. Mus. Novitates, no. 49, 4 pp., 3 figs., October 23, 1922.
26. Close of the age of mammals: Jour. Mammalogy, vol. 3, no. 4, pp. 219-237, 6 figs., November, 1922. Abstract, Science, new ser., vol. 55, p. 627, June 9, 1922.
27. Mastodons of the Hudson Highlands: Natural History, vol. 23, no. 1, pp. 3-24, 14 figs., January-February, 1923.
28. A new genus and species of Ceratopsia from New Mexico, *Pentaceratops sternbergii*: Am. Mus. Novitates, no. 93, 3 pp., 1 fig., October 18, 1923.
29. New subfamily, generic, and specific stages in the evolution of the Proboscidea: Am. Mus. Novitates, no. 99, 4 pp., December 27, 1923.
30. Joseph Leidy, founder of vertebrate paleontology in America: Science, new ser., vol. 59, pp. 173-176, February 22, 1924.
31. Joseph Leidy, founder of vertebrate paleontology in America: Acad. Nat. Sci. Philadelphia, Proc., vol. 75 [Appendix] The Joseph Leidy Commemorative Meeting, pp. 54-61, 1924.
32. *Parelephas* in relation to phyla and genera of the family Elephantidae: Am. Mus. Novitates, no. 152, 7 pp., 2 figs., December 20, 1924.
33. Additional generic and specific stages in the evolution of the Proboscidea: Am. Mus. Novitates, no. 154, 5 pp., 2 figs., December 24, 1924.
34. Final conclusions on the evolution, phylogeny, and classification of the Proboscidea: Am. Philos. Soc., Proc., vol. 64, no. 1, pp. 17-35, 3 figs., 1925.
35. The elephants and mastodons arrive in America: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 25, no. 1, pp. 3-23, 17 figs., 1 pl., January-February, 1925.

Osborn, Henry Fairfield—Continued.

36. The hall of the age of man: Am. Mus. Nat. Hist., Guide Leaflet series no. 52, 48 pp., 32 figs., May, 1925.
37. The origin of species as revealed by vertebrate paleontology; a rejoinder to William Bateson (abstract): Science, new ser., vol. 61, pp. 523-524, May 15, 1925.
38. The origin of species as revealed by vertebrate paleontology: Nature, vol. 115, pp. 925-926, 961-963, June 13, and 20, 1925.
39. The origin of species, II; Distinctions between rectigradations and allometrons: Nat. Acad. Sci., Proc., vol. 11, no. 12, pp. 749-752, December 15, 1925.
40. The evolution of human races: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 26, no. 1, pp. 3-13, 4 figs., January-February, 1926.
41. The origin of species, 1859-1935; Yale Univ., Peabody Mus. Nat. Hist., Bull. 1, no. 1, pp. 25-38, 1926; Sci. Monthly, vol. 22, no. 3, pp. 185-192, March, 1926.
42. The problem of the origin of species as it appeared to Darwin in 1859 and as it appears to us to-day: Nature, vol. 118, pp. 270-273, August 21, 1926 [and correction], p. 591, October 23, 1926; Science, new ser., vol. 64, pp. 337-341, October 8, 1926; abstract, Pan-Am. Geologist, vol. 46, no. 4, pp. 335-336, November, 1926.
43. J. L. Wortman; a biographical sketch: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 26, no. 6, pp. 652-653, portr., November-December, 1926.
44. Additional new genera and species of the mastodontoid Proboscidea: Am. Mus. Novitates, no. 238, 16 pp., 12 figs., November 30, 1926.
45. Mastodons and mammoths of North America: Am. Mus. Nat. Hist., Guide Leaflet no. 62, 46 pp., illus., 1926. (Reprinted from Nat. Hist., vol. 23, pp. 3-24 and vol. 25, pp. 3-23, 1923 and 1925.)
46. The origin of species, V; Speciation and mutation: Am. Naturalist, vol. 61, pp. 5-42, 6 figs., January-February, 1927.
47. Man rises to Parnassus; critical epochs in the pre-history of man. 217 pp., 83 figs., Princeton, New Jersey, Princeton University Press, 1927.
48. Recent discoveries relating to the origin and antiquity of man: Science, new ser., vol. 65, pp. 481-488, 2 figs., May 20, 1927, p. 597, June 17, 1927; Am. Philos. Soc., Proc., vol. 66, pp. 373-389, 2 figs., 1927; Palaeobiologica, Jg. 1, Bd. 1, pp. 189-202, 3 figs., 1928.
49. Present status of the problem of human ancestry: Am. Philos. Soc., Proc., vol. 77, no. 2, pp. 151-155, 1928.
50. The plateau habitat of the pro-dawn man: Science, new ser., vol. 67, pp. 570-571, June 8, 1928.

Osborn, Henry Stafford, 1823-1894.

1. Prospector's field book and guide in the search for and the easy determination of ores and other useful minerals. 9th ed., revised by M. W. von Bernewitz, 364 pp., 56 figs., New York, Henry Carey Baird & Co., 1920.

Osborn, W. G.

1. Oil possibilities of the St. Peter sandstone in Iowa, 12 pp., Keosauqua, Iowa, May, 1926. [Private publication.]

Osborne, Clarence B.

1. A theory to account for occurrence of oil in the vesicular cavities of igneous intrusions: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 3, pp. 288-290, May-June, 1923.
2. Ewart Gladstone Sinclair: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 12, pp. 1348-1349, December, 1927.

Osborne, Freleigh Fitz. See also Uglow, 15.

1. Antipathy of bornite and pyrrhotite (discussion): *Econ. Geology*, vol. 22, no. 1, pp. 99-101, January-February, 1927.
2. Technique of the investigation of iron ores: *Econ. Geology*, vol. 23, no. 4, pp. 442-450, 4 figs., June-July, 1928.
3. Certain magmatic titaniferous iron ores and their origin: *Econ. Geology*, vol. 23, no. 7, pp. 724-761, no. 8, pp. 895-922, 13 figs., November and December, 1928.

Ostergaard, Jens Mathias.

1. Fossil marine mollusks of Oahu: *Bernice P. Bishop Mus., Bull.* 51, 32 pp., 1 fig., 2 pls., 1928.

Over, Edwin, jr.

1. Mineral localities of Colorado: *Rocks and Minerals*, vol. 3, no. 4, pp. 110-111, December, 1928.

Overbeck, Robert Milton. See also Schwennesen, 2.

1. Geology and mineral resources of the west coast of Chichagof Island [southeastern Alaska]: *U. S. Geol. Survey, Bull.* 692, pp. 91-136, map. 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 9, no. 20, p. 632, December 4, 1919.
2. Nickel deposits in the lower Copper River valley, Alaska: *U. S. Geol. Survey, Bull.* 712, pp. 91-98, 1 fig. (map), 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 10, no. 16, p. 472, October 4, 1920.
3. Placer mining in the Tolovana district, Alaska: *U. S. Geol. Survey, Bull.* 712, pp. 177-184, 1920. Abstract by J. D. Sears, *Washington Acad. Sci., Jour.*, vol. 10, no. 18, p. 522, November 4, 1920.

Overstreet, J. B. See Barton, 2.

Owen, Luella Agnes.

1. Later studies on the loess: *Pan-Am. Geologist*, vol. 45, no. 5, pp. 377-382, June, 1926; abstract, no. 2, pp. 173-174, March, 1926.

Owen, W. T.

1. Southwest Texas oil fields: *Eng. and Min. Jour.-Press*, vol. 114, no. 12, pp. 506-510, 4 figs., September 16, 1922.

Owens, H. J. See Brockway, 1.

Ower, Leslie H.

1. The geology of British Honduras. 24 pp., (map) [Colonial Secretary's Office], Belize, British Honduras, July, 1928.
2. Geology of British Honduras: *Jour. Geology*, vol. 36, no. 6, pp. 494-509, 3 figs., August-September, 1928.
3. The silica lines of British Honduras: *Geol. Mag.*, vol. 65, pp. 507-510, 1 fig. (map), November, 1928.

Pabst, Adolf.

1. Observations on inclusions in the granitic rocks of the Sierra Nevada: California, Univ., Dept. Geol. Sci., Bull., vol. 17, no. 10, pp. 325-386, 10 figs., 9 pls., October 24, 1928.

Pace, Lula.

1. Geology of McLennan County, Texas: Baylor Bull. (Baylor Univ., Waco, Tex.), vol. 24, no. 1, 25 pp., 12 figs., 2 maps, January, 1921.

Pack, Frederick James.

1. Wonders of Utah geology: Utah, Univ., Bull. vol. 10, no. 12, 24 pp., illus., 1919.
2. Geology of Weber County [Utah]: Utah Univ., Bull., vol. 11, no. 19, pp. 5-23, 12 figs., June, 1921.
3. The Elsinore earthquakes in central Utah: Seismol. Soc., America, Bull., vol. 11, nos. 3-4, pp. 155-165, 3 pls., September-December, 1921.
4. Natural bridging in the High Plateaus [Utah]: Pan-Am. Geologist, vol. 37, no. 3, pp. 213-225, 3 figs., 5 pls., April, 1922.
5. Outstanding geological features of Colorado River basin: Pan-Am. Geologist, vol. 38, no. 4, pp. 289-298, 10 pls., November, 1922.
6. Torrential potential of desert waters [Utah]: Pan-Am. Geologist, vol. 40, no. 5, pp. 349-356, 5 pls., December, 1923.
7. New discoveries relating to the Wasatch fault: Am. Jour. Sci., 5th ser., vol. 11, pp. 399-410, 6 figs., May, 1926; abstract, Geo. Soc. America, Bull., vol. 37, no. 1, p. 182, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 170, March, 1926.
8. Structure of thermal springs on the Wasatch fault: Am. Jour. Sci., 5th ser., vol. 14, pp. 408-418, 4 figs., November, 1927; abstract, Geol. Soc. America, Bull., vol. 38, no. 1, p. 161, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 157, March, 1927.

Pack, Robert Wallace.

1. The Sunset-Midway oil field, California; Part I, Geology and oil resources; U. S. Geol. Survey, Prof. Paper 116, 179 pp., 45 pls. (incl. maps), 15 figs., 1920; abstract by J. D. Sears, Washington Acad. Sci., Jour., vol. 11, no. 3, p. 58, February 4, 1921.

Packard, Earl Leroy. See also Merriam, 25; Smith, W. D., 1.

1. An addition to the marine mammalian fauna of Newport, Oregon (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 148, March 31, 1921.
2. (and Nelson, R. N.). Geologic occurrence of the Hardgrave Jurassic fauna of Burns, Oregon (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 148, March 31, 1921.
3. The Trigonidae from the Pacific coast of North America: Oregon, Univ., Pub., vol. 1, no. 9, 58 pp., 11 pls., May, 1921.
4. New species from the Cretaceous of the Santa Ana Mountains, California: California, Univ., Dept. Geol. Sci., Bull., vol. 13, no. 10, pp. 413-462, 15 pls., June 30, 1922.
5. An aberrant oyster from the Oregon Eocene: Oregon, Univ., Pub., vol. 2, no. 4, 6 pp., 4 pls., December, 1923.
6. A new section of Paleozoic and Mesozoic rocks in central Oregon: Am. Jour. Sci., 5th ser., vol. 15, pp. 221-224, March, 1928.
7. Cretacic rocks of central Oregon (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 305, May, 1928.

Packard, Earl Leroy—Continued.

8. Discovery of Baird Mississippian fauna of central Oregon (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 315, May, 1928.

Pagliuchi, F. D.

1. A mining reconnaissance from Mazatlan [Sinaloa, Mexico]: Eng. and Min. Jour.-Press, vol. 115, no. 12, pp. 542-546, 9 figs., March 24, 1923.

Paige, Sidney. See also Darton, 14; Hayes, C. W., 1; Longwell, 6; Miser, 13.

1. United States Geological Survey as a civic institution during the war (abstract): Geol. Soc. America, Bull., vol. 30, pp. 78-79, March 31, 1919.
2. Copper deposits of the Tyrone district, New Mexico: U. S. Geol. Survey, Prof. Paper 122, 53 pp., 29 figs., 10 pls. (incl. maps), 1922.
3. The geology of the Homestake mine [Lead, South Dakota]: Econ. Geology, vol. 18, no. 3, pp. 205-237, 13 figs. (incl. map), April-May, 1923.
4. Geology of the region around Lead, South Dakota, and its bearing on the Homestake ore body: U. S. Geol. Survey, Bull. 765, 58 pp., 19 figs., 11 pls., 1924.
5. (and Foran, W. T., and Gilluly, James). A reconnaissance of the Point Barrow region, Alaska: U. S. Geol. Survey, Bull. 772, 33 pp., 4 figs., 9 pls. (incl. map), 1925.
6. Earthquakes: Sci. Monthly, vol. 20, no. 6, pp. 611-616, June, 1925.
7. La Plata formation in the plateau country (abstract): Pan-Am. Geologist, vol. 44, no. 1, pp. 76-77, August, 1925.

Painter, Louise. See Carter, 1.

Palache, Charles. See also Bauer, L. H., 1; Daly, 20.

1. The two-circle goniometer: Am. Mineralogist, vol. 5, no. 2, pp. 23-33, 3 figs., February, 1920.
2. The gnomonic projection: Am. Mineralogist, vol. 5, no. 4, pp. 67-80, 17 figs., April, 1920.
3. Further notes on crystal drawing: Am. Mineralogist, vol. 5, no. 5, pp. 96-99, 2 figs., May, 1920.
4. The Goldschmidt two-circle method; calculations in the isometric system: Am. Mineralogist, vol. 5, no. 6, pp. 112-116, 1 fig., June, 1920.
5. The Goldschmidt two-circle method; calculations in the tetragonal system: Am. Mineralogist, vol. 5, no. 7, pp. 129-132, 3 figs., July, 1920.
6. The Goldschmidt two-circle method; calculations in the hexagonal system: Am. Mineralogist, vol. 5, no. 8, pp. 143-149, 4 figs., August, 1920.
7. (and Shannon, Earl V.). Higginsite, a new mineral of the olivenite group [Bisbee, Arizona]: Am. Mineralogist, vol. 5, no. 9, pp. 155-157, 2 figs., September, 1920.
8. The Goldschmidt two-circle method; calculations in the orthorhombic system: Am. Mineralogist, vol. 5, no. 9, pp. 158-159, 1 fig., September, 1920.
9. Illustration of the orthorhombic system; measurements and calculations on higginsite: Am. Mineralogist, vol. 5, no. 9, pp. 159-164, 2 figs., September, 1920.
10. The Goldschmidt two-circle method; calculations in the monoclinic system, illustrated by monazite from Weymouth, Massachusetts: Am. Mineralogist, vol. 5, no. 10, pp. 173-181, 5 figs., October, 1920.
11. The Goldschmidt two-circle method; introduction to the triclinic system: Am. Mineralogist, vol. 5, no. 11, pp. 185-190, 4 figs., November, 1920.
12. A new mode of occurrence of struvite: Am. Mineralogist, vol. 8, no. 4, pp. 72-73, 1 fig., April, 1923.

Palache, Charles—Continued.

13. (and Pinger, A. W.). The scapolite deposit of Bolton, Massachusetts: *Am. Mineralogist*, vol. 8, no. 9, pp. 153–157, September, 1923.
14. The chrysoberyl pegmatite of Hartford, Maine: *Am. Mineralogist*, vol. 9, no. 11, pp. 217–221, 1 fig., November, 1924.
15. (and Vassar, Helen E.). Some minerals of the Keweenawan copper deposits; pumpellyite, a new mineral; sericite; saponite: *Am. Mineralogist*, vol. 10, no. 11, pp. 412–418, November, 1925.
16. Catalogue of the collection of meteorites in the mineralogical museum of Harvard University: *Am. Acad. Arts and Sci.*, vol. 61, no. 6, pp. 151–159, May, 1926.
17. Notes on new or incompletely described meteorites in the mineralogical museum of Harvard University: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 136–150, August, 1926.
18. (and Vassar, Helen E.). A note on cyanotrichite: *Am. Mineralogist*, vol. 11, no. 8, pp. 213–214, August, 1926.
- 19.. Memorial of Frederick Alexander Canfield: *Am. Mineralogist*, vol. 12, no. 3, pp. 67–70, 1 fig. (portr.), March, 1927.
20. (and Lonsdale, John T.). The Tulia meteorite, Swisher County, Texas: *Am. Jour. Sci.*, 5th ser., vol. 13, pp. 353–359, 6 figs., April, 1927.
21. Crystallography of azurite from Tsumeb, southwest Africa, and the axial ratio of azurite: *Am. Mineralogist*, vol. 12, no. 4, pp. 99–143, 39 figs., 8 pls., April, 1927.
22. (and Shannon, E. V.). Holdenite, a new arsenate of manganese and zinc, from Franklin, New Jersey: *Am. Mineralogist*, vol. 12, no. 4, pp. 144–148, 1 fig., April, 1927.
23. (and Bauer, L. H.). Cahnite, a new boro-arsenate of calcium from Franklin, New Jersey: *Am. Mineralogist*, vol. 12, no. 4, pp. 149–153, 1 fig., 1 pl., April, 1927.
24. (and Lewis, Lyman W.). A saw attachment adapting Goldschmidt's model cutting machine to the sawing of wooden models: *Am. Mineralogist*, vol. 12, no. 4, pp. 154–156, 2 pls., April, 1927.
25. (and Berman, Harry). Crystallographic notes; 1, Phosphophyllite; 2, Hematite; 3, Willemite; 4, Hedyphane: *Am. Mineralogist*, vol. 12, no. 4, pp. 180–187, 7 figs., April, 1927.
26. (and Bauer, L. H.). McGovernite, a new mineral from Sterling Hill, New Jersey: *Am. Mineralogist*, vol. 12, no. 10, pp. 373–374, October, 1927.
27. (and Bauer, L. H., and Berman, H.). Larsenite and calcium-larsenite, new members of the chrysolite group, from Franklin, New Jersey: *Am. Mineralogist*, vol. 13, no. 4, pp. 142–144, April, 1928.
28. Mineralogical notes on Franklin and Sterling Hill, New Jersey: *Am. Mineralogist*, vol. 13, no. 7, pp. 297–329, 7 pls., July, 1928.
29. The phosphorescence and fluorescence of Franklin minerals: *Am. Mineralogist*, vol. 13, no. 7, pp. 330–333, 1 fig., July, 1928.
30. (and Bauer, L. H., and Berman, H.). Larsenite, calcium-larsenite, and the associated minerals at Franklin, New Jersey: *Am. Mineralogist*, vol. 13, no. 7, pp. 334–340, July, 1928.
31. (and Ellsworth, H. V.). Zircon from North Burgess, Ontario: *Am. Mineralogist*, vol. 13, no. 7, pp. 384–391, 1 fig., 1 pl., July, 1928.
32. (and Shannon, Earl V.). Beryllonite and other phosphates from Newry, Maine: *Am. Mineralogist*, vol. 13, no. 7, pp. 392–396, July, 1928.
33. Seligmannite from Bingham, Utah: *Am. Mineralogist*, vol. 13, no. 7, pp. 402–405, 1 fig., July, 1928.

Palache, Charles—Continued.

34. (and Shannon, Earl V.). A new meteorite from Washington County, Colorado: *Am. Mineralogist*, vol. 13, no. 7; pp. 406-409, 1 pl., July, 1928.

Palmer, Andrew Henry.

1. California earthquakes during 1918: *Seismol. Soc. America, Bull.*, vol. 9, no. 1, pp. 1-7, 1 pl., March, 1919.
2. California earthquakes during 1919: *Seismol. Soc. America, Bull.*, vol. 10, no. 1, pp. 1-8, 1 pl., March, 1920.
3. Recent California earthquakes: *Sci. Monthly*, vol. 10, no. 6, pp. 529-552, 17 figs., June, 1920.
4. California earthquakes during 1920: *Seismol. Soc. America, Bull.*, vol. 11, no. 1, pp. 7-14, March, 1921.
5. California earthquakes during 1921: *Seismol. Soc. America, Bull.*, vol. 12, no. 1, pp. 20-23, 1 pl., March, 1922.

Palmer, Chase.

1. Phosphorus in California petroleum: *Econ. Geology*, vol. 17, no. 2, pp. 100-104, March-April, 1922.
2. California oil-field waters: *Econ. Geology*, vol. 19, no. 7, pp. 623-635, November, 1924.

Palmer, Dorothy Bryant Kemper.

1. A fauna from the middle Eocene shales near Vacaville, California: *California, Univ., Dept. Geol. Sci., Bull.*, vol. 14, no. 8, pp. 289-318, 6 pls., November 3, 1923.

Palmer, E. Laurence.

1. Rock stories: *Cornell Rural School Leaflet*, vol. 19, no. 3, 50 pp., January, 1926.
2. Rocks and minerals: *Cornell Rural School leaflet*, vol. 21, no. 3, 48 pp., illus., January, 1928.

Palmer, Elra C.

1. The geology of the District of Columbia: *Rocks and Minerals*, vol. 1, no. 2, p. 27, December, 1926; vol. 2, no. 1, pp. 10-11, March, 1927.

Palmer, Harold Shjöth. See also Wentworth, 21.

1. New graphic method for determining the depth and thickness of strata and the projection of dip (*U. S. Geol. Survey, Prof. Paper* 120, pp. 123-128, 1918) (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 8, p. 228, April 19, 1919.
2. Graphic determination of dip components where dips are measured in feet per mile: *Econ. Geology*, vol. 14, no. 4, pp. 346-348, 1 fig., June, 1919.
3. Radian measures in plane-table mapping: *Econ. Geology*, vol. 15, no. 3, pp. 266-267, April-May, 1920.
4. Ground water in the Norwalk, Suffield, and Glastonbury areas, Connecticut: *U. S. Geol. Survey, Water-Supply Paper* 470, 171 pp., 12 pls. (incl. maps), 18 figs., 1920; abstract, *Washington Acad. Sci., Jour.*, vol. 11, no. 21, p. 510, December 19, 1921.
5. Ground water in the Southington-Granby area, Connecticut: *U. S. Geol. Survey, Water-Supply Paper* 466, 219 pp., 30 figs., 7 pls. (incl. maps), 1921. Abstract, *Washington Acad. Sci., Jour.*, vol. 12, no. 1, pp. 19-20, January 4, 1922.

Palmer, Harold Shjöth—Continued.

6. Structure of the South Mountain laccolith, Fergus County, Montana: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 119–133, 4 figs., August, 1925.
7. The Honolulu type of artesian structure: *Hawaiian Planters' Record*, vol. 30, no. 4, pp. 422–433, 10 figs., October, 1926.
8. The geology of the Honolulu artesian system. 68 pp., 21 figs., map, Supplement to the report of the Honolulu Sewer and Water Commission to the Legislature of the Territory of Hawaii, 14th regular session, 1927.
9. Geology of Kaula, Nihoa, Necker, and Gardner islands, and French Frigates Shoal [Hawaiian Islands]: *Bernice P. Bishop Mus.*, Bull. 35, 35 pp., 12 figs., 3 pls., 1927.
10. A study of the viscosity of lava: *Hawaiian Volcano Observatory*, Monthly Bull., vol. 15, no. 1, pp. 1–4, January, 1927.
11. Das artesische Gebiet von Honolulu [Hawaii]: *Geol. Gesell. Wien*, Mitt., Bd. 19, H. 1, pp. 19–36, 7 figs., 1927.
12. Karrenbildung in den Basaltgesteinen der Hawaiischen Inseln: *Geog. Gesell. Wien*, Mitt., Bd. 70, Nr. 4–6, pp. 89–94, 1 pl., 1927.
13. Lapiés in Hawaiian basalts: *Geog. Rev.*, vol. 17, no. 4, pp. 627–631, 3 figs., October, 1927.

Palmer, Howard.

1. Observations on the Freshfield Glacier, Canadian Rockies: *Jour. Geology*, vol. 32, no. 5, pp. 432–441, 8 figs., July–August, 1924.
2. The Freshfield Glacier, Canadian Rockies: *Smithsonian Misc. Coll.*, vol. 76, no. 11, 16 pp., 1 fig., 9 pls., August 2, 1924.

Palmer, Katherine Van Winkle. See also Price, W. A., 12; Weaver, 3.

1. (and Harris, G. D.). New or otherwise interesting Tertiary molluscan species from the east coast of America: *Bull. Am. Paleontology*, vol. 8, no. 33, pp. 1–32, 3 pls., March 6, 1919.
2. Illustrations and descriptions of fossil Mollusca contained in the paleontological collections at Cornell University: *Bull. Am. Paleontology*, vol. 8, no. 36, 12 pp., 1 pl., March 1, 1921.
3. Marine Pleistocene fossils from New York City: *Science*, new ser., vol. 57, pp. 585–586, May 18, 1923.
4. Foraminifera and a small molluscan fauna from Costa Rica: *Bull. Am. Paleontology*, vol. 10, no. 40, 18 pp., 2 pls., June 13, 1923.
5. The Veneridae of eastern America; Cenozoic and recent: *Palaeontographica Americana*, vol. 1, no. 5, pp. 209–428, 35 figs., 45 pls., 1926 [text published March, 1927; pls., February, 1929].

Palmer, Leroy A.

1. The Cold Bay oil field [Alaska Peninsula]: *Pacific Min. News*, vol. 1, no. 6, pp. 171–172, 3 figs., October, 1922.
2. The eastern portion of the Mohave Desert, a region of diversified mineral possibilities: *Pacific Min. News*, vol. 1, no. 8, pp. 234–235, December, 1922.
3. Magnesite mining in California: *Am. Inst. Min. and Met. Eng.* [preprint] no. 1629, 13 pp., 8 figs., February, 1927.
4. Magnesite mining in California (with discussion): *Am. Inst. Min. and Met. Eng.*, Trans., vol. 75, pp. 743–756, 8 figs., 1927.
5. Kernite or rasorite?: *Eng. and Min. Jour.*, vol. 123, no. 12, p. 494, March 19, 1927.

Palmer, Robert Hastings.

1. Tectonic setting of Lago de Chapala [Mexico]: *Pan-Am. Geologist*, vol. 45, no. 2, pp. 125-134, 2 pls., March, 1926.
2. Upper Pleistocene occurrence along the Oaxaca coast of Mexico: *Science*, new ser., vol. 63, p. 476, May 7, 1926.
3. The Hoh formation of Washington: *Jour. Geology*, vol. 35, no. 3, pp. 276-278, April-May, 1927.
4. Geology of eastern Hidalgo and adjacent parts of Vera Cruz, Mexico: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 11, pp. 1173-1220, 11 figs., November, 1927.
5. Geology and petroleum possibilities of the Olympic Peninsula, Washington: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 12, pp. 1321-1328, 3 figs., December, 1927.
6. Sand holes of the strand: *Jour. Geology*, vol. 36, no. 2, pp. 176-180, February-March, 1928.
7. The rudistids of southern Mexico: *California Acad. Sci., Occ. Papers* 14, 137 pp., 8 figs., 18 pls., February 29, 1928.
8. Fossil and recent corals and coral reefs of western Mexico; three new species: *Am. Philos. Soc., Proc.*, vol. 67, no. 1, pp. 21-31, 3 pls., 1928.
9. Geology of southern Oaxaca, Mexico: *Jour. Geology*, vol. 36, no. 8, pp. 718-734, 8 figs., November-December, 1928.

Pan-American Geologist. See Keyes, 27.

Panyity, L. S. See also Bownocker, 3.

1. Prospecting for oil and gas. 249 pp., 128 figs., 28 tables, New York, John Wiley & Sons, 1920. Review by Raymond C. Moore, *Econ. Geology*, vol. 15, no. 4, pp. 356-359, June, 1920.
2. Lithology of Berea sand in southeastern Ohio and its effect on production: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 61, pp. 478-481, 2 figs., 1920.
3. Oil and gas bearing horizons of the Ordovician system in Ohio: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, p. 104 (abstract), no. 5, pp. 609-619, 3 figs., September-October, 1921.

Papish, Jacob.

1. Sulphur dioxide as a source of volcanic sulphur: *Indiana Acad. Sci., Proc.*, 1918, pp. 170-171, 1919.
2. New occurrences of germanium: *Econ. Geology*, vol. 23, no. 6, pp. 660-670, September-October, 1928.

Pardee, F. G.

1. Mineral resources of Michigan; Part I, Metallic minerals: *Michigan, Geol. Survey, Pub.* 37, pp. 5-58, 3 figs., 1928.

Pardee, Joseph Thomas. See also Bretz, 14; Condit, 5; Leffingwell, 1; Richards, R. W., 2.

1. Geology and mineral deposits of the Colville Indian Reservation, Washington (U. S. Geol. Survey, *Bull.* 677, 1918) (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 11, p. 315, June 4, 1919.
2. Some manganese deposits in Madison County, Montana (U. S. Geol. Survey, *Bull.* 690, pp. 131-143, 1918) (abstract by R. W. Stone): *Washington Acad. Sci. Jour.*, vol. 9, no. 2, pp. 48-49, January 19, 1919.
3. Manganese deposits of the Northwestern States (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 13, p. 385, July 19, 1919.

Pardee, Joseph Thomas—Continued.

4. (and Jones, E. L., jr.). Deposits of manganese ore in Nevada: U. S. Geol. Survey, Bull. 710, pp. 209–248, 1 pl. (map), 2 figs., March 15, 1920. Abstract, Washington Acad. Sci., Jour., vol. 10, no. 20, p. 573, December 4, 1920.
5. (and Larsen, E. S., jr., and Steiger, George). Bementite and neotocite from western Washington, with conclusions as to the identity of bementite and caryopilite: Washington Acad. Sci., Jour., vol. 11, no. 2, pp. 25–32, January 19, 1921.
6. Phosphate rock near Maxville, Granite County, Montana: U. S. Geol. Survey, Bull. 715, pp. 141–145, 1 fig., 1 pl. (map), February 7, 1921. Abstract, Washington Acad. Sci., Jour., vol. 11, no. 16, pp. 393–394, October 4, 1921.
7. Chromite ores in Washington: U. S. Geol. Survey, Bull. 725, pp. 61–65, 1 fig., August 3, 1921.
8. Deposits of manganese ore in Montana, Utah, Oregon, and Washington: U. S. Geol. Survey, Bull. 725, pp. 141–243, 11 figs., 4 pls. (incl. map), August 8, 1921. Abstract, Washington Acad. Sci., Jour., vol. 12, no. 3, pp. 71–72, February 4, 1922.
9. Glaciation in the Cordilleran region [Spokane area, Washington]: Science, new ser., vol. 56, pp. 686–687, December 15, 1922.
10. Geology and ground-water resources of Townsend Valley, Montana: U. S. Geol. Survey, Water-Supply Paper 539, 61 pp., 7 figs. (incl. map), 2 pls., 1925.
11. (and Bryan, Kirk). Origin of fossiliferous Latah clays and associated basalts near Spokane [Washington] (abstract): Pan-Am. Geologist, vol. 43, no. 5, pp. 369–370, June, 1925.
12. (and Bryan, Kirk). Geology of the Latah formation in relation to the lavas of Columbia Plateau near Spokane, Washington: U. S. Geol. Survey, Prof. Paper 140, pp. 1–16, 3 figs., 7 pls. (incl. map), February 19, 1926.
13. The Montana earthquake in relation to the geology of the region (abstract): Seismological Soc. America, Bull., vol. 16, no. 2, p. 157, June, 1926.
14. The Montana earthquake of June 27, 1925: U. S. Geol. Survey, Prof. Paper 147, pp. 7–23, 11 pls. (incl. maps), September 20, 1926.
15. Manganese-bearing deposits near Lake Crescent and Humptulips, Washington: U. S. Geol. Survey, Bull. 795, pp. 1–24, 2 figs., 2 pls. (incl. map), 1927.
16. Changes in elevation of the Rocky Mountains in Pleistocene time as possible climatic factors: Nat. Research Council, Bull. no. 61, pp. 33–35, July, 1927.
17. Earthquake in the Bighorn Mountains, Wyoming, November 17, 1925: Seismological Soc. America, Bull., vol. 17, no. 3, pp. 129–136, 1 fig., September, 1927.

Paredes, Trinidad.

1. Exploración geológica de una parte del Estado de Guerrero [México]: Bol. Minero, t. 6, no. 4, pp. 481–498, October, 1918.
2. Algunos criaderos de fierro en el Estado de Hidalgo: Boletín Minero, t. 8, no. 3–4, pp. 338–351, map, September–October, 1919.
3. (and García, J. Aurelio). Estudio de la Laguna de Cuyutlán, Estado de Colima [México]: Boletín Minero, t. 8, nos. 5–6, pp. 584–597, map, November–December, 1919.

Paredes, Trinidad—Continued.

4. Memoria relativa al objeto, historia y desarrollo del Instituto Geológico Nacional: Soc. cient. "Antonio Alzate," Mem., t. 35, nos. 1-2, pp. 21-50, 12 pls., March, 1920.
5. El petróleo en algunas islas del Golfo de California: Boletín del Petróleo, vol. 9, no. 5, pp. 403-415, 5 pls. (incl. maps), May, 1920.
6. El carbón y la grafita del Estado de Sonora: Boletín Minero, t. 9, nos. 5-6, pp. 608-613, 1 pl., May-June, 1920.
7. La circulación de las aguas en la falda occidental del Ixtaccihuatl: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 40, no. 1, pp. 1-40, 10 pls., October, 1921.
8. La cuenca artesiana de Zavala, Hacienda de Gorgorrón, San Luis Potosí: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 41, no. 4, pp. 161-183, February, 1923.
9. Circulación de las aguas subterráneas en la falda occidental del Iztaccihuatl: Mexico, Inst. geol., Anales, t. 2, nos. 1-3, pp. 18-37, 1925.
10. Algunos criaderos de fierro en los estados de Guanajuato, Jalisco y Michoacán: Bol. minero, t. 20, no. 1, pp. 9-27, 1 pl. (map), July, 1925.
11. "La Ferrería" de valle de Bravo, Estado de México: Bol. minero, t. 22, no. 1, pp. 29-40, 1 pl. (map), July, 1926.

Park, James.

1. Sudbury ore deposits: Econ. Geology, vol. 20, no. 5, pp. 500-504, August, 1925.

Park, John Furness.

1. Mining methods of Jarbidge district [Nevada]: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1400, 11 pp., 3 figs., January, 1925.

Parker, Edward Wheeler.

1. Notes on the anthracite region [Pennsylvania]: Mining and Metallurgy, no. 178, pp. 25-26, 3 figs., October, 1921.

Parker, G. H.

1. William Healey Dall (1845-1927): Am. Acad. Arts and Sci., Proc., vol. 62, no. 9, pp. 251-253, May, 1928.

Parkins, Almon Ernest.

1. The sand dunes of Lake Michigan: Tennessee Acad. Sci., Jour., vol. 1, no. 3, pp. 12, 15, July, 1926.

Parkinson, John.

1. A note on the petrographical characters of some rocks from the Northern Range of Trinidad: Geol. Mag., vol. 62, pp. 133-136, 1 fig., March, 1925.
2. The Central Range of Trinidad: Geol. Mag., vol. 63, pp. 383-384, August, 1926.

Parks, Emerson M.

1. Migration of oil and water, a further discussion: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 6, pp. 697-715, November-December, 1924.
2. Water analyses in oil production and some analyses from Poison Spider, Wyoming: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 6, pp. 927-946, 3 figs., September, 1925.

Parks, Henry Martin.

1. Biennial report of the Oregon Bureau of Mines and Geology for 1917-18. 30 pp. [December, 1918].
2. Biennial report of the Oregon Bureau of Mines and Geology for 1919-20. 26 pp. [December, 1920].

Parks, William Arthur. See also Coleman, 9.

1. The great fossil reptiles of Alberta: Hamilton Assoc., Jour. and Proc., no. 29, pp. 131-140, 1919.
2. Preliminary description of a new species of trachodont dinosaur of the genus *Kritosaurus*: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 13, sec. 4, pp. 51-59, 4 pls., 1920.
3. The osteology of the trachodont dinosaur *Kritosaurus incurvimanus*: Toronto, Univ., Studies, Geol. Series no. 11, 76 pp., 22 figs., 7 pls., 1920.
4. On *Triarthrus canadensis*, *Triarthrus glaber*, and *Triarthrus spinosus*: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 15, sec. 4, pp. 47-52, 1 pl., 1921.
5. The head and fore limb of a specimen of *Centrosaurus apertus*: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 15, sec. 4, pp. 53-63, 4 pls., 1921.
6. The development of stratigraphic geology and paleontology in Canada: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 16, sec. 4, pp. 1-46, 1922.
7. *Parasaurolophus walkeri*, a new genus and species of crested trachodont dinosaur: Toronto, Univ., Studies, Geol. ser. no. 13, 32 pp., 9 pls., 1922.
8. (and Dyer, W. S.). The stratigraphy and paleontology of Toronto and vicinity; Part 2, The Molluscoidea: Ontario Dept. Mines, 30th Ann. Rept., vol. 30, pt. 7, 43 pp., 7 pls., 1922.
9. (assisted by Madeleine Fritz). The stratigraphy and paleontology of Toronto and vicinity; Part III, Gastropoda, Cephalopoda, and Vermes: Ontario Dept. Mines, 31st Ann. Rept., vol. 31, pt. 9, 45 pp., 6 pls., 1923.
10. *Corythosaurus intermedius*, a new species of trachodont dinosaur [from the Belly River formation of Red Deer River valley, Alberta]: Toronto, Univ., Studies, Geol. ser., no. 15, 57 pp., 13 figs., 6 pls., 1923.
11. New species of crested trachodont dinosaur (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 130, March 30, 1923.
12. *Dyoplosaurus acutosquameus*, a new genus and species of armoured dinosaur; and notes on a skeleton of *Prosaurolophus maximus*: Toronto, Univ., Studies, Geol. ser., no. 18, 35 pp., 2 figs., 5 pls., 1924.
13. The dinosaurs of Alberta. In Handbook of Canada, pp. 380-383, 1 fig., Toronto, 1924.
14. Upper Ordovician at Toronto, Ontario (abstract, with discussion by George H. Chadwick): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 103-104, March 30, 1924; abstract, Pan-Am. Geologist, vol. 41, no. 2, pp. 151-152, March, 1924.
15. Paleozoic strata at Toronto (abstract): Pan-Am. Geologist, vol. 42, no. 1, pp. 67-68, August 1924; British Assoc. Adv. Sci., Rept. 92d Meeting, p. 379, 1925.

Parks, William Arthur—Continued.

16. Dinosaurs of Alberta (abstract): Pan-Am. Geologist, vol. 42, no. 1, pp. 68-69, August, 1924.
17. The stratigraphy and paleontology of Toronto and vicinity, Part VI; Stratigraphy and correlation of the Dundas formation: Ontario Dept. Mines, 32d Ann. Rept., vol. 32, pt. 7, pp. 89-116, 2 figs., 1925.
18. The stratigraphy and paleontology of Toronto and vicinity: addenda et corrigenda: Ontario Dept. Mines, 32d Ann. Rept., vol. 32, pt. 7, pp. 35-38, 1 pl., 1925.
19. *Struthiomimus brevetertius*, a new species of dinosaur from the Edmonton formation of Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, sec. 4, pp. 65-70, 1 fig., 1 pl., 1926.
20. *Arrhinoceratops brachyops*, a new genus and species of Ceratopsia from the Edmonton formation of Alberta: Toronto, Univ., Studies, Geol. ser., no. 19, 15 pp., 2 pls., 1925.
21. New genus and species of horned dinosaur from the Cretaceous of Alberta (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 226, March 30, 1925.
22. Buried Indian workshop with remains of an extinct mammal [in Saskatchewan]: Geol. Soc. America, Bull., vol. 36, no. 2, pp. 429-434, 1 pl., June 30, 1925; abstract, no. 1, pp. 225-226, March 30, 1925.
23. Cultural aspects in geology: Nature, vol. 116, pp. 432-435, September 19, abstract, p. 340, August 29, 1925; Pan-Am. Geologist, vol. 44, no. 3, pp. 161-186, October, 1925; British Assoc. Adv. Sci., Rept. 93d Meeting, pp. 55-74, 1926.
24. The dinosaurs of Alberta (abstract): British Assoc. Adv. Sci., Rept. 92d Meeting, p. 381, 1925.
25. Time and life: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, pp. lxxv-lxxxv, 1926.
26. *Thescelosaurus warreni*, a new species of orthopodous dinosaur from the Edmonton formation of Alberta: Toronto, Univ., Studies, Geol. ser., no. 21, 42 pp., 18 figs., 2 pls., 1926.
27. Canada's resources in building stone: Canadian Inst. Min. and Met., Bull. no. 156, pp. 367-386, 3 figs., April, 1925; Trans., vol. 28, pp. 141-160, 3 figs. [1926].
28. Trenton-Collingwood-Utica relationships in western Ontario (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 229, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 3, p. 238, April, 1927.
29. *Champsosaurus albertensis*, a new species of rhynchocephalian from the Edmonton formation of Alberta: Toronto, Univ., Studies, Geol. ser., no. 23, 48 pp., 25 figs., 2 pls., 1927.
30. *Albertosaurus arctungus*, a new species of theropodous dinosaur from the Edmonton formation of Alberta: Toronto, Univ., Studies, Geol. ser., no. 25, 42 pp., 20 figs., 1 pl., 1928.
31. Some reflections on paleontology: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 387-402, March 30, 1928.
32. Faunas and stratigraphy of the Ordovician black shales and related rocks in southern Ontario: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 22, sec. 4, pp. 39-92, 28 figs., 1 pl., March, 1928.
33. *Struthiomimus samueli*, a new species of Ornithomimidae from the Belly River formation of Alberta: Toronto, Univ., Studies, Geol. ser., no. 26, 24 pp., 5 pls., 1928.

Parmelee, Cullen Warren.

1. (and Schroyer, C. R.). Further investigations of Illinois fire clays: Illinois, State Geol. Survey, Bull. no. 38, pp. 273-417, 14 figs., 1922. Extract, 149 pp., 14 figs., 1921.
2. Refractory clays of Illinois: Am. Ceramic Soc., Jour., vol. 5, no. 10, pp. 685-692, October, 1922.

Parr, S. W. See Austin, M. M., 1.

Parry, John.

1. Minerals deposited by bacteria in mine water: Eng. and Min. Jour.-Press, vol. 115, no. 23, pp. 1011-1016, 6 figs., June 9, 1923.

Parsons, Arthur B.

1. Operations of the Mesabi Iron Co.: Eng. and Min. Jour.-Press, vol. 117, no. 4, pp. 157-167, 12 figs., January 26, 1924.
2. The Tintic Standard mine [Tintic district, Utah]: Eng. and Min. Jour.-Press, vol. 120, no. 17, pp. 645-652, 7 figs., October 24, 1925.

Parsons, Arthur Leonard. See also Aminoff, 1; Knight, C. W., 1; Walker, T. L., 7, 11, 16, 17, 18, 24, 25, 26, 27, 28, 32, 33, 36, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55.

1. Calculation in the triclinic system, illustrated by anorthite: Am. Mineralogist, vol. 5, nos. 11 and 12, pp. 190-194, 198-207, 3 figs., November and December, 1920.
2. (and Thomson, E.). Animikite and macfarlanite from Silver Islet, Thunder Bay, Lake Superior: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 23-26, 1 pl., 1921.
3. Calcite from Shangoinah Island, near Thunder Cape, Lake Superior: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 51-53, 1 pl., 1921.
4. A third type of proustite from Cobalt, Ontario: Toronto, Univ., Studies, Geol. ser., no. 14, pp. 89-90, 1 fig., 1922.
5. Economic deposits in Thunder Bay district: Ontario Dept. Mines, 30th Ann. Rept., vol. 30, pt. 4, pp. 27-28, 4 figs., 1922.
6. The preservation of mineral specimens: Am. Mineralogist, vol. 7, no. 4, pp. 59-63, April, 1922.
7. The formation of kaolin at moderate depths: Am. Mineralogist, vol. 8, no. 9, pp. 157-162, September, 1923.
8. Xanthoconite from Cobalt, Ontario: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 11-12, 1924.
9. Pectolite and apophyllite from Thetford mines, Quebec: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 55-57, 1924.
10. The Royal Ontario Museum of Mineralogy: Canadian Min. Jour., vol. 45, no. 23, pp. 554-555, 2 figs., June 6, 1924.
11. Albertite in gypsum from Hillsboro, New Brunswick: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 33-34, 1925.
12. Additional data concerning the preservation of minerals: Am. Mineralogist, vol. 11, no. 4, pp. 79-82, April, 1926.
13. The dehydration of gypsum: Toronto, Univ., Studies, Geol. ser., no. 24, pp. 24-27, 1927.

Parsons, C. S.

1. Bathurst iron mine [New Brunswick]: Canadian Min. Jour., vol. 45, no. 49, pp. 1193-1194, December 5, 1924.

Pastor Giraud, Antonio.

1. Exploración geológica en la región de La Purísima: Mexico, Inst. Geol., Bol. no. 39, pp. 93-108, 6 pls. (incl. maps and sections), 1922.

Patterson, J. W. See Stock, 22.

Patton, Horace Bushnell, 1858-1929.

1. Geology and ore deposits of the Platoro-Summitville mining district, Colorado: Colorado Geol. Survey, Bull. 13, 122 pp., 40 pls. (incl. maps), 2 figs., 1917 [1918].
2. Merging of Carlile shale and Timpas limestone formations in southeastern Colorado: Geol. Soc. America, Bull., vol. 34, no. 3, pp. 495-498, 2 figs., September 30, 1923.
3. Underground water possibilities for stock and domestic purposes in the La Junta area, Colorado: Colorado Geol. Survey, Bull. 27, pt. 1, pp. 1-72, 4 figs., 2 pls. (incl. map), 1924.

Patton, Leroy T. See also Sellards, 21.

1. In support of Gardner's theory of the origin of certain concretions: Jour. Geology, vol. 30, no. 8, pp. 700-701, 1 fig., November-December, 1922.
2. The geology of Potter County: Texas, Univ., Bull., no. 2330, 184 pp., 4 figs., 9 pls. (incl. map), November, 1923.
3. Geology and the location of dams in west Texas: Econ. Geology, vol. 19, no. 8, pp. 756-761, December, 1924.
4. (and Hicks, Clifford). Notes on the occurrence of glacial material beyond the border of the drift in Muskingum County, Ohio: Ohio Jour. Sci., vol. 25, no. 2, pp. 97-98, March, 1925.
5. The sandstone dikes around Rockwall, Texas: Holland's Mag., Dallas, Texas, vol. 44, no. 6, pp. 5, 86, 4 figs., June, 1925.
6. Geology and the location of dams on the Canadian River, Texas: Econ. Geology, vol. 20, no. 5, pp. 464-469, August, 1925.
7. The stratigraphy of western Oklahoma and adjacent parts of Texas: Am. Jour. Sci., 5th ser., vol. 12, pp. 193-197, 1 fig., September, 1926.

Patton, Milton John.

1. The coal resources of Canada: Econ. Geography, vol. 1, no. 1, pp. 73-88, 18 figs., March, 1925. Reprint, Queen's Univ., Kingston, Ontario, Bull. Dept. History . . . no. 50, 19 pp., February, 1925.

Patton, Raymond Stanton.

1. Coast erosion (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 76-77, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 141, March, 1924.

Patty, Ernest N. See also Whitwell, 1.

1. Dominant features controlling ore deposits of Washington: Eng. and Min. Jour., vol. 110, no. 10, pp. 467-470, 3 figs., September 4, 1920.
2. (and Glover, S. L.). The mineral resources of Washington, with statistics for 1919: Washington Geol. Survey, Bull. no. 21, 155 pp., 3 figs., 13 pls. (incl. map), 1921.
3. The metal mines of Washington: Washington Geol. Survey, Bull. no. 23, 366 pp., 27 figs., 36 pls. (incl. maps), 1921.

Pautsch, E.

1. Methods of applied geophysics: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 8, pp. 863-865, August, 1928.

Paxson, Roland B. See Barton, 5.

Payne, Henry Mace.

1. The undeveloped mineral resources of the South. 368 pp., American Mining Congress, Washington, D. C., 1928.

Peabody Museum of Natural History, Yale University.

1. General guide to the exhibition halls of the Peabody Museum of Natural History, Yale University. 54 pp., illus., New Haven, 1927.

Peacock, Martin A.

1. (and Fuller, Richard E.). Chlorophaeite, sideromelane, and palagonite from the Columbia River Plateau: *Am. Mineralogist*, vol. 13, no. 7, pp. 360-383, 1 pl., July, 1928.

Pearce, J. Newton. See Kay, G. F., 4.

Pearce, N. C.

1. Oil in the western provinces [of Canada]: *Canadian Min. Jour.*, vol. 40, pp. 673-676, 3 figs., September 10, 1919.
2. Larder Lake district, northern Ontario: *Canadian Min. Jour.*, vol. 40, pp. 693-695, 2 figs., September 17, 1919.

Pearson, Helga S.

1. Some skulls of *Perchoerus* (*Thinohyus*) from the White River and John Day formations: *Am. Mus. Nat. Hist., Bull.*, vol. 48, pp. 61-96, 17 figs., 1923.

Pearson, Peter Henry.

1. Surface marks of oil deposits. 74 pp., 1 fig., published by P. H. Pearson, Washington, D. C., copyright 1920.

Peattie, Roderick.

1. Geography of Ohio: *Ohio Geol. Survey*, 4th ser., vol. 27, 137 pp., 28 figs., 8 pls., 1923.

Peck, Albert B. See also Myers, 3.

1. Note on andalusite from California; a new use and some thermal properties: *Am. Mineralogist*, vol. 9, no. 6, pp. 123-129, 1 fig., June, 1924; *California State Min. Bur., Mining in California*, vol. 20, no. 2, pp. 149-154, 1 fig., April, 1924.
2. Changes in the constitution and microstructure of andalusite, cyanite, and sillimanite at high temperatures and their significance in industrial practice: *Am. Mineralogist*, vol. 10, no. 9, pp. 253-280, 11 figs., September, 1925; *Am. Ceramic Soc., Jour.*, vol. 8, no. 7, pp. 407-429, 11 figs., July, 1925.
3. The time factor in the formation of some artificial minerals: *Jour. Geology*, vol. 34, no. 1, pp. 65-70, 1 fig., January-February, 1926.
4. Dumortierite as a commercial mineral: *Am. Mineralogist*, vol. 11, no. 4, pp. 96-101, April, 1926.

Peck, Charles Harvey.

1. Our world; a sketch of origins according to science. 215 pp., New York, The Franklaye Press, 1921.

Peck, Frederick Burritt, 1860-1925. See also Pennsylvania, 1; Ries, 5.

1. Occurrence and origin of white clays at Saylorsburg, Monroe County, Pennsylvania (abstract): *Geol. Soc. America, Bull.*, vol. 30, no. 1, p. 96, March 31, 1919.
2. Vanport limestone of Lawrence County: *Pennsylvania Geol. Survey*, 4th ser., *Bull. M7*, pp. 292-304, 1 fig., 1 pl., 1925.

Pedersen, Alwin.

1. Einiges über Gletscher und glaziologische Bescheinungen an der Ostküste Grönlands, insbesondere im Bereich des Scoresbysund: Zeitschr. Gletscherkunde, Bd. 15, H. 4-5, pp. 253-260, 6 figs., November, 1927.

Peele, Robert.

1. James Furman Kemp: Eng. and Min. Jour., vol. 122, no. 22, p. 872, portr., November, 27, 1926.

Pegau, A. A. See also Wentworth, 22.

1. Rutherford mines, Amelia County, Virginia: Am. Mineralogist, vol. 13, no. 12, pp. 583-588, December, 1928.

Penck, Albrecht.

1. Geography among the earth sciences: Am. Philos. Soc., Proc., vol. 66, pp. 621-644, 1927.

Pennsylvania, Bureau of Topographic and Geological Survey.

1. Bulletin, nos. 1-94 [mimeographed]:

1. Effect of the war on the price of coal in Pennsylvania, by George H. Ashley. September 24, 1919.
2. Oil and gas in southeast Pennsylvania, by George H. Ashley, October, 1919.
3. Development and probable life of gas pool at McKeesport, Pennsylvania, by George H. Ashley. November 28, 1919.
4. Decline of McKeesport gas pool, by George H. Ashley. December 26, 1919.
5. The McKeesport gas pool, Allegheny County, Pennsylvania, by George H. Ashley. January 12, 1920.
6. River and creek coal in eastern Pennsylvania, by C. W. Webbert. January 16, 1920.
7. A high-grade building stone in Greene County, by George H. Ashley. May 28, 1920.
8. The origin of Pennsylvania coal, by George H. Ashley. May 30, 1920.
9. Future use of raw coal, by George H. Ashley. June, 1920.
10. The possibility of oil and gas from deeper drilling in western Pennsylvania, by George H. Ashley. June 4, 1920.
11. Gas wells on Nine Mile Run, Pittsburgh, Penna., by J. French Robinson. June 26, 1920.
12. Gas wells on Pollock Run, Westmoreland County, Pennsylvania, by J. French Robinson. July 1, 1920.
13. Natural-gas situation in Pennsylvania, by George H. Ashley. October, 1920.
14. Future sources of power, by George H. Ashley. November 24, 1920.
15. Mineral resources of Pennsylvania, by George H. Ashley. December 1, 1920.
16. Geology of oil and gas in relation to coal, by George H. Ashley. December 1, 1920.
17. Future of natural gas in Pennsylvania, by George H. Ashley. December 18, 1920.
18. Oil from Pennsylvania shales and coals; preliminary report of work of Chas. R. Fettke. January 1, 1921.
19. Production of the McKeesport gas pool, by J. French Robinson. January 24, 1921.
20. Pennsylvania iron ores, by J. Ross Corbin. April, 1921.
21. Feldspar in Pennsylvania, by George H. Ashley. September 20, 1921.
22. The coal deposits of southern Somerset County, by J. D. Sisler. [No. date.]
23. Coal beds in Cambria County, Pennsylvania, by J. D. Sisler. January 16, 1922.

Pennsylvania, Bureau of Topographic and Geological Survey—Continued.

1. Bulletin—Continued.

24. Coal beds in Greene County, Pennsylvania, by J. D. Sisler. January 28, 1922.
25. Coal reserves in Greene County, Pennsylvania, by John F. Reese. January 31, 1922.
26. Coal beds in Washington County, Pennsylvania, by J. D. Sisler. March 10, 1922.
27. Coal reserves in Washington County, Pennsylvania, by John F. Reese. March 10, 1922.
28. Magnesite in Pennsylvania, by R. W. Stone. February 10, 1922.
29. Geologic structure of the Greensburg quadrangle, Penna., by M. E. Johnson. February 25, 1922.
30. Coal beds in Allegheny County, Pennsylvania, by J. D. Sisler. April 18, 1922.
31. Coal reserves in Allegheny County, Pennsylvania, by John F. Reese. April 18, 1922.
32. Coal beds in Fayette County, Pennsylvania, by J. D. Sisler. March 15, 1922.
33. Coal reserves in Fayette County, Pennsylvania, by John F. Reese. March 15, 1922.
34. Coal beds in Westmoreland County, by J. D. Sisler. March 25, 1922.
35. Coal reserves in Westmoreland County, Pennsylvania, by John F. Reese. March 25, 1922.
36. Coal beds in Indiana County, Pennsylvania, by J. D. Sisler. April 27, 1922.
37. Coal reserves in Indiana County, Pennsylvania, by John F. Reese. April 29, 1922.
38. Coal beds in Armstrong County, Pennsylvania, by J. D. Sisler. May 10, 1922.
39. Coal reserves in Armstrong County, Pennsylvania, by John F. Reese. May 20, 1922.
40. White clay deposits at Saylorsburg, Monroe County, Pennsylvania, by Frederick B. Peck. June 3, 1922.
41. Coal beds in Elk County, Pennsylvania, by J. D. Sisler. June 24, 1922.
42. Coal beds in Jefferson County, Pennsylvania, by J. D. Sisler. May 25, 1922.
43. Coal reserves in Somerset County, Pennsylvania, by John F. Reese. June 15, 1922.
44. Coal reserves in Cambria County, Pennsylvania, by John F. Reese. June 20, 1922.
45. White clay deposits in central Pennsylvania, by E. S. Moore. July 5, 1922.
46. Coal beds in Butler County, Pennsylvania, by J. D. Sisler. June 21, 1922.
47. Manganese occurrences in eastern Pennsylvania, by Benjamin L. Miller, July 15, 1922.
48. Pyrite from bituminous coal mines in Pennsylvania, by Henry Leighton. July 26, 1922.
49. Coal beds in Clarion County, Pennsylvania, by J. D. Sisler. September 10, 1922.
50. Coal beds in Center, Cameron, Clinton, and Lycoming counties, Pennsylvania, by J. D. Sisler. September 12, 1922.
51. New oil pool at Tidioute and gas pools near Corry and Meadville, Penna., by M. E. Johnson. July 28, 1922.
52. Coal beds in Mercer, Crawford, Venango, Forest, Warren, McKean, Potter, Tioga, and Bradford counties, Pennsylvania, by J. D. Sisler. September 15, 1922.
53. Coal reserves in Clearfield County, Pennsylvania, by John F. Reese. August 22, 1922.
54. Bituminous coal reserves in Pennsylvania, by John F. Reese. August 1, 1922.
55. Coal beds in Lawrence County, Pennsylvania, by J. D. Sisler. September 25, 1922.

Pennsylvania, Bureau of Topographic and Geological Survey—Continued.

1. Bulletin—Continued.

56. Oil fields rejuvenated, by Robert B. Bossler. September 1, 1922.
57. Coal beds in Beaver County, Pennsylvania, by J. D. Sisler. October 30, 1922.
58. Potash fiasco in Tioga County, Pennsylvania, by R. W. Stone, and Simple tests for potash, by W. B. Hicks. October 31, 1922.
59. Bog-iron ore, by J. Ross Corbin. December 12, 1922.
60. Geologic structure of the Pittsburgh quadrangle, Pa., by M. E. Johnson. January 15, 1923.
61. Magnetite in Pennsylvania, by J. Ross Corbin. January 22, 1923.
62. Rocks of the McCalls Ferry quadrangle, Penna., by Anna I. Jonas. February 3, 1923.
63. Brown iron ores in Pennsylvania, by J. Ross Corbin. February 15, 1923.
64. Coal beds in southern Somerset County, Pennsylvania, by James D. Sisler. February 20, 1923.
65. Lead and zinc ores in Blair County, Penna., by Benjamin LeRoy Miller. March 5, 1923.
66. Oil and gas development in Pennsylvania in 1922, by M. E. Johnson. March 6, 1923.
67. Lead and zinc ores near Phoenixville, Chester County, Pennsylvania, by Benjamin LeRoy Miller. March 19, 1923.
68. Lead and zinc ores in Lancaster County, Pennsylvania, by Benjamin LeRoy Miller. March 17, 1923.
69. Lead and zinc ores in Bucks County, Pennsylvania, by Benjamin LeRoy Miller. March 15, 1923.
70. Zinc ores at Friedensville, Lehigh County, Penna., by Benjamin LeRoy Miller. March 20, 1923.
71. Copper ores in Pennsylvania, by J. Ross Corbin. April 2, 1923.
72. Flagstone industry in northeastern Pennsylvania, by R. W. Stone. April 5, 1923.
73. Oil and gas sands in the north half of the Pittsburgh quadrangle, Penna., by M. E. Johnson. April 20, 1923.
74. Chromite in Pennsylvania, by J. Ross Corbin. April 20, 1923.
75. Rocks of the Quarryville quadrangle, Penna., by Anna I. Jonas. April 25, 1923.
76. Calcareous marl in Pennsylvania south of the terminal moraine by J. B. R. Dickey. May 3, 1923.
77. Gold in Pennsylvania, by J. Ross Corbin. May 5, 1923.
78. Gas in Leidy Township, Clinton County, Penna., by Meredith E. Johnson. June 12, 1923.
79. Tidioute oil pool, Warren County, Pa., by Meredith E. Johnson. July 17, 1923.
80. Coal beds in northern Somerset County, Pennsylvania, by James D. Sisler. September 15, 1923.
81. Volatile matter in Pennsylvania coals, by James D. Sisler. November 1, 1923.
82. Roofing granules industry in southeastern Pennsylvania, by R. W. Stone. November 10, 1923.
83. The living earth, by Geo. H. Ashley. January 10, 1924.
84. Coal reserves in Clarion County, Pennsylvania, by James D. Sisler. March 10, 1924.
85. Coal reserves in Jefferson County, Pennsylvania, by James D. Sisler. March 20, 1924.
86. The age and origin of the earth, by George H. Ashley, 8 pp., June 10, 1924.
87. Molding sands in Pennsylvania, by R. W. Stone, 20 pp., August 8, 1925.
88. Silurian stratigraphy at Lehigh Gap, by George H. Ashley, 6 pp., November 23, 1925.
89. A practical classification of coals, by George H. Ashley, 16 pp., March, 1926.
90. Pennsylvania, the makings of a world power, by George H. Ashley, 23 pp., August 25, 1926.

Pennsylvania, Bureau of Topographic and Geological Survey—Continued.

1. Bulletin—Continued.

91. A stratigraphic time scale, by George H. Ashley, 10 pp., March 30, 1927.
92. Anthracite culm and silt, by James D. Sisler, 9 pp., January 23, 1928.
93. The Canadian system, by George H. Ashley, 10 pp., April 2, 1928.
94. High spots in Pennsylvania, by George H. Ashley, 8 pp., May 5, 1928.

2. [Report]: Pennsylvania, Dept. Forests and Waters, Rept. June 1, 1924, to May 31, 1926, pp. 26–31 [1927].

Penrose, Richard Alexander Fullerton, jr.

1. Radium and uranium; their ores and occurrence in nature: New York State Mus. Bull., nos. 207, 208, pp. 199–208, 1919.
2. The relation of economic geology to the general principles of geology: Econ. Geology, vol. 16, no. 1, pp. 48–51, January, 1921. Abstract, Eng. and Min. Jour., vol. 111, no. 2, pp. 65–66, January 8, 1921.
3. The Society of Economic Geologists; its sphere and its future: Econ. Geology, vol. 17, no. 2, pp. 124–127, March–April, 1922.
4. (and Ball, S. H.). Summary of proceedings of the Society of Economic Geologists, 1920–21. A publication of the Society of Economic Geologists. 16 pp. [1922].
5. Memorial to John Casper Branner: Geol. Soc. America, Bull., vol. 36, no. 1, pp. 15–44, portr., March 30, 1925.
6. Biographical memoir John Casper Branner, 1850–1922: Nat. Acad. Sci., Mem., vol. 21, 3d mem., 20 pp., portr., 1926.

Pentland, A. See also Wallace, 21.

1. A method of measuring the angularity of sands (abstract): Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 21, sec. 4, p. xciii, 1927.

Pepperberg, Leon J. See also Mills, R. V. A., 5.

1. Thermal currents as a factor in oil accumulation: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 4, pp. 429–431, July–August, 1923.

Perini, V. C., jr. See also Coffin, 1; Crawford, R. D., 1.

1. (and Collins, M. J.). Anticlines in Routt and Moffat counties: Colorado Geol. Survey, Bull. 24, pp. 7–46, 10 figs., 1 pl. (map), 1920.

Perkins, Edward H.

1. The origin of the Dighton conglomerate of the Narragansett basin of Massachusetts and Rhode Island: Am. Jour. Sci., 4th ser., vol. 49, pp. 61–75, 1 fig., January, 1920.
2. A new graptolite locality in central Maine; with notes on the graptolites by Rudolf Ruedemann: Am. Jour. Sci., 5th ser., vol. 8, pp. 223–227, September, 1924.
3. (and Smith, Edward S. C.). Contributions to the geology of Maine, No. 1; A geological section from the Kennebec River to Penobscot Bay: Am. Jour. Sci., 5th ser., vol. 9, pp. 204–228, 7 figs. (incl. maps), March, 1925.
4. Contributions to the geology of Maine, No. 2; Part 1, The Moose River sandstone and its associated formations: Am. Jour. Sci., 5th ser., vol. 10, pp. 368–375, 1 fig. (map), October, 1925.

Perkins, Edward H.—Continued.

5. Contributions to the geology of Maine, No. 3; The evolution of the drainage of the Waterville region: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 352-364, 3 figs., November, 1927.

Perkins, George Henry.

1. Report of the State geologist on the mineral industries and geology of Vermont, 1917-18: Eleventh of this series. 247 pp., 18 pls., 10 figs. [1919].
2. Physiography of Vermont: Vermont, State Geologist, 11th Rept., pp. 1-44 [1919].
3. The physiography of Vermont: *Science*, new ser., vol. 49, pp. 77-81, January 24, 1919.
4. The geology of Mill Stone Hill [Barre, Vermont]: Vermont Soc. Engineers, Proc., pp. 6-10, October 8, 1920.
5. A detailed study of the Trenton beds of Grand Isle: Vermont, State Geologist, Twelfth Rept., 1919-20, pp. 77-89, 4 pls., 1921.
6. Mineral resources: Vermont, State Geologist, Twelfth Rept., 1919-20, pp. 299-326, 5 pls., 1921.
7. History and summary of geological work in Vermont, 1810-1923: Vermont, State Geologist, Thirteenth Rept., 1921-22, pp. 1-70, 1923.
8. Mineral resources: Vermont, State Geologist, Thirteenth Rept., 1921-22, pp. 329-338, 1923.
9. The geology of Grand Isle County: Vermont, State Geologist, Fourteenth Rept., 1923-24, pp. 63-71, 1924.
10. Mineral resources: Vermont, State Geologist, Fourteenth Rept., 1923-24, pp. 344-351, 1924.
11. Report of the State geologist on the mineral industries and geology of Vermont, 1925-26, fifteenth of this series, 322 pp., 46 pls., Burlington, Vt., 1927.
12. The present state of our knowledge of peat: Vermont, State Geologist, Fifteenth Rept., 1925-26, pp. 1-38, 1927.
13. Mineral resources, 1926-27: Vermont, State Geologist, Fifteenth Rept., 1925-26, pp. 264-271, 1927.

Perkins, T. A.

1. As to the filling of veins: *Eng. and Min. Jour.-Press*, vol. 116, no. 23, p. 991, December 8, 1923.

Perrine, Irving. See Woodruff, 1.

Perry, E. L.

1. Summary report on the geology of Plymouth and Bridgewater, Vermont: Vermont, State Geologist, Fifteenth Rept., 1925-26, pp. 160-162, 1927.

Perry, Eugene S. See also Kentucky G. S., 43.

1. Geological map of Lewis County, Kentucky: Kentucky Geol. Survey, Ser. 6, 1925. Scale, 1 inch=1 mile.
2. The Kevin-Sunburst and other oil and gas fields of Sweetgrass arch: Montana, State Bur. Mines and Met., Mem. no. 1, 41 pp. and 3 figs (mimeographed), 8 pls., December, 1928.

Perry, Gene.

1. Subsurface structure of eastern Kentucky: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 2, pp. 152-157, 4 figs., March-April, 1924.

Peterson, Eunice.

1. Block faulting in the St. Croix Valley [Minnesota]: Jour. Geology, vol. 35, no. 4, pp. 368-374, 4 figs., (incl. map), May-June, 1927.

Peterson, Olof August.

1. Report upon the material discovered in the upper Eocene of the Uinta Basin by Earl Douglass in the years 1908-9, and by O. A. Peterson in 1912: Carnegie Mus., Annals, vol. 12, nos. 2-4, pp. 40-168, 14 pls., 19 figs., October, 1919.
2. The American diceratheres: Carnegie Mus., Mem., vol. 7, no. 6, pp. 399-476, 10 pls., 37 figs., July, 1920.
3. A fossil-bearing slab of sandstone from the Agate Spring quarries of western Nebraska exhibited in the Carnegie Museum: Carnegie Mus., Annals, vol. 15, no. 1, pp. 91-93, 1 fig., 1 pl., March, 1923.
4. The hyoid arch of the Miocene camel *Stenomylus*: Carnegie Mus., Annals, vol. 15, no. 1, pp. 94-95, 1 pl., March, 1923.
5. Restoration of *Merychys elegans* subsp. *minimus* Peterson: Carnegie Mus., Annals, vol. 15, no. 1, pp. 96-103, 10 figs., 2 pls., March, 1923.
6. Discovery of fossil mammals in the Brown's Park formation of Moffat County, Colorado: Carnegie Mus., Annals, vol. 15, nos. 2 and 3, pp. 299-304, 3 figs., July, 1924.
7. Osteology of *Dolichorhinus longiceps* Douglass, with a review of the species of *Dolichorhinus* in the order of their publication: Carnegie Mus., Mem., vol. 9, no. 4, pp. 405-472, 18 figs., 14 pls., November, 1924.
8. The Brown's Park formation: Science, new ser., vol. 63, p. 231; February 26, 1926.
9. The fossils of the Frankstown cave, Blair County, Pennsylvania: Carnegie Mus., Annals, vol. 16, no. 2, pp. 249-314, 10 figs., 9 pls., March, 1926.
10. The inferior dentition of a young mastodon: Carnegie Mus., Annals, vol. 17, no. 2, pp. 255-257, 2 figs., May, 1927.
11. The Brown's Park formation: Carnegie Mus., Mem., vol. 11, no. 2, pp. 87-121, 24 figs., 7 pls., April 8, 1928.

Peterson, Orrin P.

1. Some geological features and court decisions of the Utah Apex-Utah Consolidated controversy, Bingham district [Utah]: Am. Inst. Min. and Met. Eng., Trans., vol. 70, pp. 904-932, 13 figs., 1924; [pre-print] no. 1341, 29 pp., 13 figs., June, 1924; abstract, Mining and Metallurgy, vol. 5, no. 216, pp. 597-598, December, 1924.

Peterson, P. P.

1. Rate and mode of soil deposition in the Palouse area of Washington and Idaho: Science, new ser., vol. 55, pp. 102-103, January 27, 1922.

Peterson, William.

1. Dinosaur tracks in the roofs of coal mines; a strange phenomenon noted in Utah and Colorado: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 24, no. 3, pp. 388-391, 4 figs., May-June, 1924.

Petrasccheck, Wilhelm.

1. Kristalliner Magnesit in Amerika: Montanistische Rundschau, Jg. 14, no. 12, pp. 262-263, June 16, 1922.
2. Metallogenetic zones: Econ. Geology, vol. 18, no. 8, pp. 777-778, December, 1923.

Petrunkévitch, Alexander.

1. Tertiary spiders and opilionids of North America: Connecticut Acad. Arts and Sci., Trans., vol. 25, pp. 211-279, 30 figs., March, 1922.

Petry, Loren C.

1. Fossil plants showing structure from late Devonian rocks of New York (abstract): *Pan-Am. Geologist*, vol. 44, no. 1, p. 76, August, 1925.

Pettijohn, Francis J.

1. Intraformational phosphate pebbles of the Twin City Ordovician: *Jour. Geology*, vol. 34, no. 4, pp. 361-373, 2 figs., May-June, 1926.

Phalen, William Clifton.

1. Salt resources of the United States: U. S. Geol. Survey, Bull. 669, 284 pp., 17 pls. (incl. maps), 16 figs., 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 9, no. 19, p. 600, November 19, 1919.
2. The magnesite industry in the United States: *Min. and Sci. Press*, vol. 119, pp. 295-298, 5 figs., August 30, 1919.

Phelps, Robert William.

1. (and Lake, Francis Wilbur). *Petroleum engineering*. 574 pp., 107 figs., Houston, Texas, Gulf Publishing Company, 1924.

Phemister, Thomas Crawford. See also Johannsen, 7, 8; Williams, M. Y., 17.

1. The determination of 2V in sections perpendicular to an optic axis: *Jour. Geology*, vol. 32, no. 5, pp. 400-406, 7 figs., July-August, 1924.
2. A note on the Lancaster Gap mine, Pennsylvania: *Jour. Geology*, vol. 32, no. 6, pp. 498-510, 8 figs., August-September, 1924.
3. A criticism of the application of the theory of assimilation to the Sudbury sheet: *Jour. Geology*, vol. 33, no. 8, pp. 819-824, November-December, 1925.
4. Igneous rocks of Sudbury and their relation to the ore deposits: *Ontario Dept. Mines, 34th Ann. Rept.*, vol. 34, pt. 8, 61 pp., illus., 1926.
5. Evidence of assimilation and assimilation processes: *Jour. Geology*, vol. 34, no. 7, pp. 653-656, October-November, 1926.
6. A comparison of the Keweenaw sills of Sudbury and Cobalt, Ontario: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 22, sec. 4, pp. 121-197, 7 figs., 4 pls., May, 1928.

Phillips, Alexander Hamilton.

1. Thomsonite from Peekskill, New York: *Am. Mineralogist*, vol. 9, no. 12, pp. 240-241, December, 1924.
2. Memorial of Washington A. Roebling: *Am. Mineralogist*, vol. 12, no. 3, pp. 64-67, 1 fig. (portr.), March, 1927.

Picher, Rodolphe Hector.

1. Road materials in a portion of Vaudreuil County, Quebec, and along the St. Lawrence River from the Quebec boundary to Cardinal, Ontario: *Canada, Geol. Survey, Mem.* 106, 12 pp., 1918.
2. Report on road materials along the St. Lawrence River, from the Quebec Boundary line to Cardinal, Ontario: *Canada, Mines Branch, Bull.* no. 32, 65 pls., map, 1920.
3. Investigations of road materials in New Brunswick and Nova Scotia: *Canada, Mines Branch, Investigations in Ceramics and Road Materials*, 1924, pp. 18-45, 1925.
4. Road materials in eastern Ontario: *Canada, Dept. Mines, Mines Branch, Investigations in Ceramics and Road Materials*, pp. 23-29, 1926.

Pieper, H. K. See Hertel, 2.

Piers, Harry.

1. Obituary notice of Walter Henry Prest, geologist, 1856-1920: Nova Scotian Inst. Sci., Trans., vol. 15, pt. 4, pp. xli-xliii, November 1, 1923.
2. On a new tungsten (scheelite) deposit at Lower Sackville, Halifax County, Nova Scotia: Nova Scotian Inst. Sci., Proc. and Trans., vol. 16, pp. 38-45, November 21, 1927.

Piggot, Charles Snowden.

1. Lead isotopes and the problem of geologic time: Washington Acad. Sci., Jour., vol. 18, no. 10, pp. 269-273, May 19, 1928.
2. The radium content of Stone Mountain granite: Washington Acad. Sci., Jour., vol. 18, no. 11, pp. 313-316, June 4, 1928.

Pike, F. H.

1. On the difficulties encountered in the evolution of air-breathing vertebrates: Science, new ser., vol. 59, pp. 402-403, May 2, 1924.

Pike, R. W.

1. Geological studies in the San Antonio and Nacimiento River valleys, Monterey County, California (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 213, March 30, 1926.

Pilsbry, Henry Augustus.

1. Revision of W. M. Gabb's Tertiary Mollusca of Santo Domingo: Acad. Nat. Sci. Philadelphia, Proc., vol. 73, pt. 2, pp. 305-428, 48 figs., 32 pls., 1922.
2. Recent and fossil Bermudan snails of the genus *Poecilozonites*: Acad. Nat. Sci. Philadelphia, Proc., vol. 76, pp. 1-9, 6 figs., 1924.
3. Miocene and Pleistocene Cirripedia from Haiti: U. S. Nat. Mus. Proc., vol. 65, art. 2, 3 pp., 1 pl., 1924.
4. William Healey Dall: Nautilus, vol. 41, no. 1, pp. 1-6, July, 1927.

Pinger, A. W. See Palache, 13.

Pinkley, George R.

1. (and Roth, Robert). An altered volcanic ash from the Cretaceous of western Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 10, pp. 1015-1022; 3 figs., October, 1928.

Piper, Arthur M. See also Laney, 1.

1. Geology and water resources of the Goose Creek basin, Cassia County, Idaho: Idaho, Bur. Mines and Geology, Bull. no. 6, 78 pp., 6 pls. (incl. map), 1923.
2. Geology and water resources of the Bruneau River basin, Owyhee County, Idaho: Idaho, Bur. Mines and Geology, Pamphlet no. 11, 56 pp., maps (n. d., 1924?) [mimeographed].
3. Possibilities of petroleum in Power and Oneida counties, Idaho: Idaho, Bur. Mines and Geology, Pamphlet no. 12, 24 pp., 1 fig., 4 pls. (maps), December, 1924 [mimeographed].
4. Ground water for irrigation on Camas Prairie, Camas and Elmore counties, Idaho: Idaho, Bur. Mines and Geology, Pam. 15, 46 pp., 6 figs., 1 pl. (map) [1926] [mimeographed].
5. (and Kirkham, Virgil R. D.). Ground water for municipal supply at Idaho Falls, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 16, 13 pp. [1926] [mimeographed].

Piper, Arthur M.—Continued.

6. (and Laney, Francis B.). Geology and metalliferous resources of the region about Silver City, Idaho: Idaho Bur. Mines and Geology, Bull. no. 11, 165 pp., 6 figs., 13 pls. (incl. maps), December, 1926.
7. Metalliferous resources of Silver City, Idaho (abstract): Washington Acad. Sci., Jour., vol. 17, no. 9, pp. 237-238, May 4, 1927.
8. The origin of artesian pressure: Econ. Geology, vol. 23, no. 6, pp. 683-696, September-October, 1928.

Pirsson, Louis Valentine, 1860-1919.

1. Rock classification for engineering: Econ. Geology, vol. 14, no. 3, pp. 264-266, 1 fig., May, 1919.
2. A textbook of geology . . . Part I, Physical geology. 2d ed., 470 pp., 319 figs., map, New York, John Wiley & Sons, 1920.
3. Biographical memoir of James Dwight Dana, 1813-1895: Nat. Acad. Sci., Biog. Mem., vol. 9, pp. 41-92, portr., December, 1919.
4. The classification of igneous rocks; a study for students: Am. Jour. Sci., 5th ser., vol. 2, pp. 265-284, November, 1921.
5. (and Schuchert, Charles). Introductory geology for use in universities, colleges, schools of science, etc., and for the general reader. Part I, Physical geology, by Louis V. Pirsson; Part II, Outlines of historical geology, by Charles Schuchert, x, 693 pp., illus., map, New York, J. Wiley & Sons, 1924.
6. Rocks and rock minerals; a manual of the elements of petrology without the use of the microscope. Second edition, revised by Adolph Knopf. 426 pp., 74 figs., 36 pls., New York, John Wiley & Sons, 1926.

Pirtle, G. W. See Kentucky G. S., 7, 12.

Platts, John B.

1. Replacement by ores: Eng. and Min. Jour.-Press, vol. 121, no. 6, pp. 249-250, February 6, 1926.

Plummer, Frederick Byron. See also Moore, R. C., 13.

1. Preliminary paper on the stratigraphy of the Pennsylvanian formations of north-central Texas (with discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 132-150, 3 figs., 1919.
2. Progress in petroleum geology: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 3, pp. 413-416, May-June, 1921.
3. A new compass for geologists: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 4, pp. 511-512, 1 fig., July-August, 1921.
4. (and Moore, R. C.). Stratigraphy of the Pennsylvanian formations of north central Texas: Texas, Univ., Bull. no. 2132, 237 pp., 19 figs., 27 pls. (incl. map) [1922].
5. (and Plummer, H. J.). Midway correlations on the basis of Foraminifera (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 297, May, 1928; Geol. Soc. America, Bull., vol. 39, no. 1, p. 278, March 30, 1928.

Plummer, Helen Jeanne. See also Plummer, F. B., 5.

1. Foraminifera of the Midway formation in Texas: Texas, Univ., Bull. no. 2644, 206 pp., 15 pls. (incl. map), November 22, 1926.

Plyler, E. K.

1. The growth of ice crystals: Jour. Geology, vol. 34, no. 1, pp. 58-64, 2 figs., January-February, 1926.

Pogue, Joseph Ezekiel. See also Gilbert, C. G., 1; Matteson, 2.

1. Geology as a basis of citizenship (abstract): Geol. Soc. America, Bull., vol. 30, p. 77, March 31, 1919.
2. The economics of petroleum. 375 pp., 150 figs., New York, John Wiley & Sons, 1921.
3. Optical fluorite in southern Illinois: Illinois, State Geol. Survey, Bull. no. 38, pp. 419-425, 1 fig., 1922.

Pohl, Erwin R.

1. Geological explorations in Michigan: Smithsonian Inst., Explorations and Field Work in 1927, pp. 27-32, 6 figs., 1928. (Pub. 2957.)

Poindexter, O. F.

1. (and Newcombe, R. B.). Mineral resources of Michigan; Part II, Non-metallic minerals: Michigan, Geol. Survey, Pub. 37, pp. 59-139, 7 figs., 1928.

Poitevin, Eugene. See also Ellsworth, 1.

1. Crystallography of some Canadian minerals; albite, titanite, scapolite, and polycrase: Am. Mineralogist, vol. 4, no. 2, pp. 11-13, 2 figs., February, 1919.
2. Crystallography of some Canadian minerals; stephanite, epidote, and calamine: Am. Mineralogist, vol. 4, no. 3, pp. 22-25, 3 figs., March, 1919.
3. Crystallography of some Canadian minerals; axinite: Am. Mineralogist, vol. 4, no. 4, pp. 32-36, 5 figs., April, 1919.
4. Crystallography of some Canadian minerals; cerusite: Am. Mineralogist, vol. 4, no. 5, pp. 56-58, 8 figs., May, 1919.
5. (and Ellsworth, H. V.). Inyoite from New Brunswick: Canada, Geol. Survey, Bull. no. 32, 18 pp., 10 figs., 3 pls., May, 1921.
6. Platiniferous rocks from Tulameen map area, Yale district, British Columbia, and Ural Mountains, Russia: Canada, Geol. Survey, Summ. Rept., 1923, pt. A., pp. 84-101, 5 figs. (incl. maps), 2 pls., 1924.
7. (and Ellsworth, H. V.). New optical data for analyzed sussexite: Am. Mineralogist, vol. 9, no. 9, pp. 188-190, September, 1924.
8. A new occurrence of lansfordite from Atlin, British Columbia: Am. Mineralogist, vol. 9, no. 11, pp. 225-228, 2 figs., November, 1924.
9. Mineralogy at Ottawa: Canadian Min. Jour., vol. 46, no. 9, pp. 227-228, February, 1925.
10. Contributions to Canadian mineralogy, 1926: Canada, Geol. Survey, Bull. no. 46, pp. 1-21, 7 figs., 1927. [Pub. 2125.]

Pollock, James B.

1. The amount of the geologically recent negative shift of strand line on Oahu: Washington Acad. Sci., Jour., vol. 18, no. 3, pp. 53-59, February 4, 1928.
2. A study of the fringing and fossil coral reefs on Oahu, one of the Hawaiian Islands (summary): Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., pp. 1834-1836, 1928.
3. Fringing and fossil coral reefs of Oahu: Bernice P. Bishop Mus., Bull. 55, 56 pp., 3 figs., 6 pls., 1928.

Pompeckj, Josef Felix.

1. Is the earth growing old?: Smithsonian Inst., Ann. Rept., 1927, pp. 255-270, 1928.

Pond, W. F. See Greene, 8.

Ponton, Gerald M.

1. (and Whitehurst, John W.). The Spring Hill-Sarepta gas field, Webster and Bossier parishes, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 5, pp. 546-554, 1 fig., September-October, 1923.

Poor, Russell Spurgeon.

1. The character and significance of the basal conglomerate of the Pennsylvanian system in southern Illinois: Illinois State Acad. Sci., Trans., vol. 18, pp. 369-375, 1 fig. (map), 1925.
2. Oil possibilities of the Galesburg quadrangle, Knox and Warren counties, Illinois: Illinois, State Geol. Survey, Illinois Petroleum, Press Bull. ser., no. 9, 8 pp., 2 figs., June 18, 1927.

Porter, Charles A. See also Beeson, 1; Lindgren, 18.

1. The economic aspect of economic geology: Min. and Sci. Press, vol. 122, pp. 161-162, January 29, 1921.
2. Minor crustal movements and ore deposits: Eng. and Min. Jour.-Press, vol. 118, no. 20, pp. 781-782, 1 fig., November 15, 1924.
3. Intersecting fracture zones and mineral districts: Eng. and Min. Jour.-Press, vol. 118, no. 17, pp. 650-652, 2 figs., October 25, 1924.

Porter, Mary W.

1. Practical crystal drawing: Am. Mineralogist, vol. 5, no. 5, pp. 89-95, 4 figs., May, 1920.

Porter, William W., II.

1. The New England earthquake of January 7, 1925: Seismol. Soc. America, Bull., vol. 14, no. 4, pp. 233-239, 1 fig., December, 1924 [1925].

Posnjak, Eugen. See also Merwin, 1, 6; Sosman, 10.

1. (and Merwin, H. E.). The hydrated ferric oxides: Am. Jour. Sci., 4th ser., vol. 47, pp. 311-348, 5 figs., May, 1919.
2. (and Tunell, George). Studies of weathering and sedimentation: Carnegie Inst. Washington, Year Book no. 27, 1927-28, pp. 71-76, 2 figs., December, 1928.

Poulsen, Chr.

1. The Cambrian, Ozarkian, and Canadian faunas of northwest Greenland: Meddelelser om Grønland, Bd. 70, pp. 233-343, 10 figs., 8 pls., 1927; also issued as Communications paléontologiques, no. 24, Muséum de Minéralogie et de géologie de l'Université de Copenhague.

Powell, W. Carlos. See also Black, R. F., 1.

1. (and Staley, C. G.) Report on investigation of the geology and water resources of the Tularosa basin: New Mexico, State Eng., 8th Bienn. Rept., pp. 193-206, map [1928].

Powers, Sidney. See also Bowen, N. L., 14; Hobbs, 16; Hopkins, O. B., 1, 2; Miser, 3; Tomlinson, 4.

1. Intrusive bodies at Kilauea: Zeitschr. Vulkanologie, Bd. 3, H. 1, pp. 28-35, October, 1916.
2. The Sabine uplift, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 2, pp. 117-136, 2 figs., 1920.
3. The Butler salt dome, Freestone County, Texas: Am. Jour. Sci., 4th ser., vol. 49, pp. 127-142, 2 figs., February, 1920.
4. A lava tube at Kilauea: Hawaiian Volcano Observatory, Monthly Bull., vol. 8, no. 3, pp. 46-49, March, 1920.

Powers, Sidney—Continued.

5. Notes on Hawaiian petrology: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 256–280, 3 figs., October, 1920.
6. Strand markings in the Pennsylvanian sandstones of Osage County, Oklahoma: *Jour. Geology*, vol. 29, no. 1, pp. 66–80, 7 figs., January–February, 1921.
7. Petroleum geology—its past and its future: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 4, pp. 445–446, July–August, 1921.
8. The number of American geologists: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 4, pp. 499–500, July–August, 1921.
9. Solitario uplift, Presidio-Brewster counties, Texas: *Geol. Soc. America, Bull.*, vol. 32, no. 4, pp. 417–428, 4 figs., December 1, 1921; abstract, no. 1, pp. 46–47, March 31, 1921.
10. Gastropod trails in Pennsylvanian sandstones in Texas: *Am. Jour. Sci.*, 5th ser., vol. 3, pp. 101–107, 3 figs., February, 1922.
11. Reflected buried hills and their importance in petroleum geology: *Econ. Geology*, vol. 17, no. 4, pp. 233–259, 2 figs., June–July, 1922.
12. (and Hopkins, O. B.). The Brooks, Steen, and Grand Saline salt domes. Smith and Van Zandt counties, Texas: *U. S. Geol. Survey, Bull.*, 736, pp. 179–239, 2 figs., 4 pls., December 23, 1922.
13. New geological map of Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 2, p. 240, March–April, 1924.
14. Cotton Valley oil and gas field, Webster Parish, Louisiana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 2, pp. 244–246, 1 fig., March–April, 1924.
15. Stroud oil field, Oklahoma: *Mining and Metallurgy*, vol. 5, no. 208, pp. 184–185, 1 fig., April, 1924.
16. Structural geology of the Mid-Continent region: a field for research (with discussion by K. C. Heald): *Geol. Soc. America, Bull.*, vol. 36, no. 2, pp. 379–392, June 30, 1925; abstract, no. 1, p. 156, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 151, March, 1925.
17. Interior salt domes of Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 1, pp. 1–60, 14 figs., 1 pl., January, 1926; *Geology of salt dome oil fields*, pp. 209–268, 14 figs., 1 pl., 1926.
18. Effect of salt and gypsum on the formation of Paradox and other valleys of southwestern Colorado (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 168, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 166, March, 1926.
19. The function of State geological surveys: *Econ. Geology*, vol. 21, no. 6, pp. 610–612, September, 1926.
20. Oil and gas in Oklahoma; petroleum geology in Oklahoma: *Oklahoma Geol. Survey, Bull.* no. 40–G, 24 pp., December, 1926; *Bull.* no. 40, vol. 1, pp. 1–20, July, 1928.
21. Age of folding of the Wichita, Arbuckle, and Ouachita mountains, Oklahoma (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 150, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 2, p. 155, March, 1927.
22. Crinerville oil field, Carter County, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 10, pp. 1067–1085, 6 figs., October, 1927.
23. The Seminole uplift, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 10, pp. 1097–1108, 4 figs., October, 1927.

Powers, Sidney—Continued.

24. Buried ridges in west Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 10, pp. 1109-1115, 2 figs., October, 1927.
25. Plains type of folding (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, pp. 157-158, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 208, March 30, 1928.
26. Age of the folding of the Oklahoma Mountains—the Ouachita, Arbuckle, and Wichita Mountains of Oklahoma and the Llano-Burnet and Marathon uplifts of Texas: *Geol. Soc. America, Bull.*, vol. 39, no. 4, pp. 1031-1072, 11 figs., December 30, 1928.

Prather, Harold P.

1. Manitoba, a potential Canadian mining area: *Eng. and Min. Jour.*, vol. 122, no. 23, pp. 887-893, 4 figs., December 4, 1926.

Pratt, Joseph Hyde.

1. Biennial report of the State geologist, 1917-1918: *North Carolina Geol. and Econ. Survey*, 110 pp., Raleigh, 1919.
2. (and Berry, Miss H. M.). The mining industry in North Carolina during 1913-17, inclusive: *North Carolina Geol. and Econ. Survey, Econ. Paper no. 49*, 170 pp., 1 pl., 1919.
3. Biennial report of the State geologist, 1919-1920. 74 pp., *North Carolina Geol. and Econ. Survey*, Raleigh, 1921.
4. The work of the State Geological Survey and mining conditions in North Carolina: *Am. Mining Cong., 23d Ann. Convention, Rept. of Proc.*, pp. 488-491, 1921.
5. Extension of Triassic coal field of North Carolina: *Pan-Am. Geologist*, vol. 37, no. 3, pp. 246-248, April, 1922.
6. Recovery of low-grade magnetitic ores in North Carolina: *Pan-Am. Geologist*, vol. 37, no. 4, pp. 345-347, May, 1922.
7. Biennial report of the State geologist and director, 1921-1922: *North Carolina Geol. and Econ. Survey*, 104 pp., Raleigh, 1923.

Pratt, Wallace Everett. See also Barton, 2; Hackford, 1; Hager, D., 2; Hull, 5, Johnson, D. W., 16; Lee, W. T., 3; Washburne, 3.

1. Geologic structure and producing areas in north Texas petroleum fields (with discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 3, pp. 44-70, 1919.
2. The present excitement [petroleum] at Fort Stockton, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, pp. 88-89, January-February, 1911.
3. The recent discovery [of oil and gas] at El Dorado, Arkansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, pp. 90-91, January-February, 1921.
4. A note on supposed evidence of the volcanic origin of Gulf coast salt domes: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, pp. 91-94, January-February, 1921.
5. A new Gulf coast salt dome [Fort Bend County, Texas]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 3, pp. 252-254, May-June, 1922.
6. Oil at Luling, Caldwell County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 2, pp. 182-183, March-April, 1923.
7. (and Lahee, F. H.). Faulting and petroleum accumulation at Mexia, Texas (with discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 3, pp. 226-236, 3 figs., 1 pl., May-June, 1923.

Pratt, Wallace Everett—Continued.

8. Oil and gas in the Texas Panhandle (with discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 3, pp. 237-249, 3 figs., May-June, 1923.
9. (and Lahee, F. H.). Faulting and petroleum accumulation at Mexia, Texas: *Oil Engineering and Finance*, vol. 4, no. 82, pp. 119-122, 4 figs., August 4, 1923.
10. (and Johnson, Douglas W.). Recent local subsidence of the Gulf coast of Texas (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 169, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, pp. 166-167, March, 1926.
11. (and Sellards, E. H.). Depression of Goose Creek oil field, Texas (abstract): *Pan-Am. Geologist*, vol. 45, no. 3, p. 254, April, 1926.
12. An earthquake in the Panhandle of Texas [July 30, 1925]: *Seismological Soc. America, Bull.*, vol. 16, no. 2, pp. 146-149, 1 pl., June, 1926.
13. (and Johnson, Douglas W.). Local subsidence of the Goose Creek oil field [Texas]: *Jour. Geology*, vol. 34, no. 7, pp. 577-590, 6 figs., October-November, 1926.
14. Two new salt domes in Texas [Moss Bluff and Boggy Creek domes]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 11, pp. 1171-1172, November, 1926.
15. Some questions on the cause of the subsidence of the surface in the Goose Creek field, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 8, pp. 887-889, August, 1927.
16. Diatoms seen as probable source of petroleum: *Oil Weekly*, vol. 47, no. 3, pp. 33-34, 44, 3 figs., October 7, 1927; [in Spanish], *Bol. Petroleo*, vol. 25, no. 1, pp. 19-23, January, 1928.

Prescott, Basil. See also Shaw, S. F., 1.

1. The underlying principles of the limestones replacement deposits of the Mexican province: *Eng. and Min. Jour.*, vol. 122, no. 7, pp. 246-253, no. 8, pp. 289-296, 11 figs., August 14 and 21, 1926.

Pressler, Edward D.

1. Upper faunal horizons of San Fernando section in Ventura County, California (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 318, May, 1928.

Prest, Walter Henry, 1856-1920.

1. On the nature and origin of the eskers of Nova Scotia: *Nova Scotian Inst. Sci., Proc. and Trans.*, vol. 14, part 4, pp. 371-393, 1919.
2. Esker excavation in Nova Scotia [at Middlefield, Queens County]: *Nova Scotian Inst. Sci., Proc. and Trans.*, vol. 15, pt. 1, pp. 33-45, 2 figs., January 1, 1922.

Prettyman, Thomas Mann. See also Liddle, 2.

1. (and Cave, H. S.). Petroleum and natural gas possibilities in Georgia: *Georgia Geol. Survey, Bull.* no. 40, 167 pp., 13 figs., 8 pls., map, 1923.

Price, George McCready.

1. Geology. *In* Geography and geology, Modern American education, vol. 3, pp. 417-524, 37 figs., American Educational Institute, Philadelphia, 1920.

Price, George McCready—Continued.

2. The fossils as age markers in geology: Princeton Theological Review, vol. 20, no. 4, pp. 585-615, October, 1922.
3. The new geology; a textbook for colleges, normal schools, and training schools; and for the general reader. 726 pp., 452 figs., Pacific Publishing Association, Mountain View, California [1923].
4. Geology and its relation to scripture revelation: Victoria Inst., Jour. of Trans., vol. 56, pp. 97-123, 1924.
5. Evolutionary geology and the new catastrophism. 352 pp., 91 figs., Pacific Press Publishing Association, Mountain View, California, 1926.
6. Facts and theories in geology: Science, new ser., vol. 65, pp. 373-374, April 15, 1927.

Price, Paul Holland. See also Reger, 9; Tilton, 12, 13.

1. The coprolite limestone horizon of the Conemaugh series in and around Morgantown, West Virginia: Carnegie Mus., Annals, vol. 17, no. 2, pp. 211-254, 10 figs., 12 pls., May, 1927.
2. Marble of Pocahontas County, West Virginia: West Virginia Acad. Sci., Proc., vol. 2 (West Virginia Univ. Bull., ser. no. 29, no. 1), pp. 107-117, 7 figs., August, 1928.

Price, William Armstrong. See also Swartz, C. K., 2.

1. Notes on the paleontology of Webster County; Invertebrate fossils from the Pottsville series: West Virginia Geol. Survey, Webster County, pp. 544-615, 2 figs., 2 pls., 1920.
2. A Pocono brachiopod fauna: Science, new ser., vol. 51, pp. 146-147, February 6, 1920.
3. Hydrozoan affinities of *Serpulites* Sowerby (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 210, March 31, 1920.
4. Carbon ratios in Carboniferous coals of Oklahoma and their relation to petroleum (discussion): Econ. Geology, vol. 15, no. 7, pp. 610-611, November, 1920.
5. Shell regeneration in a Pennsylvanian brachiopod: Washington Acad. Sci., Jour., vol. 11, no. 2, pp. 32-36, 1 fig., January 19, 1921.
6. Chert deposits of West Virginia: West Virginia Geol. Survey, Nicholas County, pp. 221-240, 2 pls., 1 fig., 1921.
7. Notes on the paleontology of Nicholas County; Invertebrate fossils from the Pottsville series: West Virginia Geol. Survey, Nicholas County, pp. 751-788, 2 pls., 1 fig., 1921.
8. General formulae for the determination of thickness and depth of strata: Econ. Geology, vol. 17, no. 5, pp. 370-381, 1 fig., August, 1922.
9. Description of members, Chemung series: general account, Portage series: West Virginia, Tucker County, pp. 245-257, 1923.
10. Caliche and pseudo-anticlines: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 6, pp. 1009-1017, 2 figs., September, 1925.
11. Gas and oil near Edna, Jackson County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 9, p. 905, September, 1926.
12. (and Palmer, Katherine Van Winkle). A new fauna from the Cook Mountain Eocene near Smithville, Bastrop County, Texas: Jour. Paleontology, vol. 2, no. 1, pp. 20-31, 1 fig., 2 pls., March, 1928.

Primmer, George H.

1. The Sudbury nickel region [Ontario]: Geog. Soc. Philadelphia, Bull., vol. 25, no. 1, pp. 33-42, 5 figs., January, 1927.

Prior, Charles E.

1. Notes on the Salmon River mining district [northwestern British Columbia]: Min. and Sci. Press, vol. 121, pp. 518-520, 3 figs., October 9, 1920.

Prior, George Thurland.

1. On the chemical composition of the meteorites Amana (=Homestead) and Eagle Station [Iowa and Kentucky]: Mineral. Mag., vol. 18, pp. 173-179, August, 1918.

Prister, Augusto.

1. Notas preliminares sobre vestigios glaciales en el Estado de Hidalgo y en el Valle de México: Soc. cient. "Ant. Alz.," Mem. y Rev., t. 48, nos. 1-6, pp. 1-13, 9 pls., 1927.

Prommel, H. W. C.

1. Geology and structure of portions of Grand and San Juan counties, Utah: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 4, pp. 384-399, 2 figs., 1 pl., July-August, 1923.
2. (and Crum, H. E.). Salt domes of Permian and Pennsylvanian age in southeastern Utah and their influence on oil accumulation: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 4, pp. 373-393, 11 figs., April, 1927.
3. Salt domes, fractures, and test wells in southeast Utah: Oil Weekly, vol. 45, no. 11, pp. 41, 45, June 3, 1927.
4. (and Crum, H. E.). Structural history of parts of southeastern Utah from interpretation of geologic sections: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 8, pp. 809-820, 2 figs., August, 1927; Oil Weekly, vol. 46, no. 7, pp. 31-34, 42, August 5, 1927.
5. Anticlines on Nequoia arch, Green River Desert, Utah: Oil Weekly, vol. 47, no. 11, pp. 310, 318, December 2, 1927.

Prout, F. S.

1. Schist east of Santa Rosa, New Mexico: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 1, p. 88, January, 1927.

Prouty, William Frederick. See also Swartz, C. K., 9; Tilton, 12, 13.

1. Further evidence of the age of the crystalline and semicrystalline rocks in Alabama (abstract): Geol. Soc. America, Bull., vol. 30, pp. 113-114, March 19, 1919.
2. Crystalline graphite deposits of Alabama (abstract): Geol. Soc. America, Bull., vol. 30, pp. 112-113, March 31, 1919.
3. Notes on the geology of a portion of Clay County, Alabama (abstract): Elisha Mitchell Sci. Soc., Jour., vol. 36, nos. 1-2, p. 4, September, 1920.
4. Age of Talladega phyllite [Carboniferous] (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 151, March 31, 1922.
5. Age of Talladega slates of Alabama: Pan-Am. Geologist, vol. 34, no. 5, pp. 363-366, 1 fig., 1 pl., June, 1922.
6. The age of the Ocoee and associated rocks of Clay County, Alabama (abstract): Elisha Mitchell Sci. Soc., Jour., vol. 38, nos. 1-2, pp. 16-17, September, 1922.
7. The rejuvenated Ocoee (abstract): Elisha Mitchell Sci. Soc., Jour., vol. 38, nos. 1-2, p. 33, September, 1922.
8. Geology of the Muscle Shoals area, Alabama: Elisha Mitchell Sci. Soc., Jour., vol. 38, nos. 1-2, pp. 88-89, September, 1922.

Prouty, William Frederick—Continued.

9. (and Swartz, C. K.). Sections of the Rose Hill and McKenzie formations: Maryland Geol. Survey, Silurian, pp. 53-104, 3 pls., 1923.
10. Geology and mineral resources of Clay County, with special reference to the graphite industry: Alabama Geol. Survey, County Rept. no. 1, 190 pp., 53 figs., 26 pls., map (in separate cover), 1923.
11. Structural conditions in west central Appalachians (abstract): Elisha Mitchell Sci. Soc., Jour., vol. 41, nos. 1-2, pp. 23-24, September, 1925.
12. Triassic basin west of Raleigh (abstract): Elisha Mitchell Sci. Soc., Jour., vol. 41, nos. 1-2, pp. 24-26, September, 1925.
13. Relation of rock character and structure to topography in the central belt of the folded Appalachians (abstract): Elisha Mitchell Sci. Soc., Jour., vol. 41, nos. 1-2, pp. 44-46, September, 1925.
14. Faunas of the Devonian, Silurian, and Ordovician periods: West Virginia Geol. Survey, Mercer, Monroe, and Summers counties, pp. 860-867, 1926.
15. The Triassic of the Durham Basin (abstract): Elisha Mitchell Sci. Soc., Jour., vol. 42, nos. 1-2, pp. 22-24, October, 1926.
16. Triassic deposits of Durham, North Carolina, and structural relations to other Triassic basins of eastern North America (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 210-211, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 145, March, no. 3, p. 231, April, 1928.
17. Typical structures of central Appalachian area and their relation to topography (abstract): Elisha Mitchell Sci. Soc., Jour., vol. 44, no. 1, p. 14, September, 1928.

Prutzman, Paul W.

1. Chemical characteristics of California petroleums: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 5, pp. 560-575, September-October, 1924.

Purdue, Albert Homer, 1861-1918.

1. (and Miser, H. D.). Description of the Hot Springs district: U. S. Geol. Survey, Geol. Atlas U. S., Hot Springs folio, Arkansas (no. 215), 12 pp., 8 figs., 3 maps, section and illustration sheets, 1923.

Purdy, Wesley.

1. A summary of the Canadian foothills belt: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 3, pp. 249-254, 1920.

Putnam, George Palmer.

1. The Putnam Baffin Island expedition: Geog. Rev., vol. 18, no. 1, pp. 1-40, 37 figs., map, January, 1928.

Putnam, George Rockwell.

1. Condition of the earth's crust and the earlier American gravity observations: Geol. Soc. America, Bull., vol. 33, no. 2, pp. 287-302, 1 fig., June 30, 1922.
2. The equilibrium theory of the earth's crust: Washington Acad. Sci., Jour., vol. 16, no. 11, pp. 285-291, June 4, 1926.
3. Notes and reflections on isostasy: Science, new ser., vol. 65, pp. 245-248, March 11, 1927.
4. Regional isostatic reduction of gravity determination: Nat. Acad. Sci., Proc., vol. 14, no. 5, pp. 407-418, 1 fig., May, 1928.

Putnam, George Rockwell—Continued.

5. Proof of isostasy by a simple gravity reduction method: Nat. Acad. Sci., Proc., vol. 14, no. 5, pp. 418-427, 1 fig. May, 1928.

Putnam, Palmer Cosslet.

1. A chart showing the chemical relationships in the mineral kingdom. 31 pp., chart, New York, John Wiley & Sons, 1925.
2. The existence of a once homogeneous magma-mass underlying Central America: Jour. Geology, vol. 34, no. 8, pp. 807-823, 6 figs., November-December, 1926.
3. (and Roberts, E. J., and Selchow, D. H.). Contributions to determinative mineralogy: Am. Jour. Sci., 5th ser., vol. 15, pp. 89-102, 253-261, 423-430, 455-460, 10 figs., 1 pl., February, March, May, and June, 1928.

Pycraft, W. P.

1. The Nebraska tooth [*Hesperopithecus haroldcookii*]: Nature, vol. 110, pp. 707-708, November 25, 1922.

Q., H. M.

1. Obituary, W. L. Uglow: Canadian Min. Jour., vol. 47, no. 37, p. 885, September 10, 1926.

Quervain, F.. See Herschi, 4.

Quinn, R. F. See Wallace, 21.

Quirke, Terence Thomas. See also Collins, W. H., 15; Kindle, 24.

1. The Richardton [North Dakota] meteorite: Science, new ser., vol. 49, pp. 92-93, January 24, 1919.
2. The Richardton [North Dakota] meteorite: Jour. Geology, vol. 27, no. 6, pp. 431-448, 2 figs., September-October, 1919.
3. Metallic copper in a meteorite vein: Econ. Geology, vol. 14, no. 8, pp. 619-624, 1 pl., December, 1919.
4. An analysis of the process of thrust faulting (abstract): Science, new ser., vol. 51, p. 519, May 21, 1920.
5. Concerning the process of thrust faulting: Jour. Geology, vol. 28, no. 5, pp. 417-438, 7 figs., July-August, 1920.
6. Discussion of "Summaries of pre-Cambrian literature of North America," by Edward Steidtmann: Jour. Geology, vol. 29, no. 5, pp. 469-474, July-August, 1921.
7. Geneva map area, Sudbury district, Ontario: Canada, Geol. Survey, Summ. Rept., 1920, pt. D, pp. 7-18, map, 1921.
8. Wanapitei Lake map area [Sudbury district, Ontario]: Canada, Geol. Survey, Summ. Rept., 1921, pt. D, pp. 34-50, map, 1922.
9. Parallel folds and boudinage (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, pp. 59-60, March 30, 1923.
10. Boudinage, an unusual structural phenomenon: Geol. Soc. America, Bull., vol. 34, no. 4, pp. 649-660, 9 figs., December, 30, 1923.
11. Huronian complex near Killarney, Ontario (abstract, with discussion by A. C. Lawson): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 89-90, March 30, 1924; abstract, Pan-Am. Geologist, vol. 41, no. 2, pp. 144-145, March, 1924.
12. Correlation of Huronian and Grenville rocks: Jour. Geology, vol. 32, no. 4, pp. 316-335, 8 figs., May-June, 1924.
13. Correlation of Huronian and Grenville rocks of southeastern Ontario (abstract): Pan-Am. Geologist, vol. 42, no. 4, p. 308, November, 1924; British Assoc. Adv. Sci., Rept. 92d Meeting, p. 390, 1925.

Quirke, Terence Thomas—Continued.

14. Elements of geology. 414 p., 147 figs., New York, Henry Holt and Company, 1925.
15. Potholes and certain features of glacial abrasion: Illinois State Acad. Sci., Trans., vol. 17, pp. 194-198, 4 pls., 1925.
16. Some features of continental glaciation: Illinois State Acad. Sci., Trans., vol. 18, pp. 394-400, 3 figs., 1 pl., 1925.
17. Origin of sedimentary iron ores (discussion): Econ. Geology, vol. 20, no. 8, pp. 770-771, December, 1925.
18. Huronian-Grenville relations: Am. Jour. Sci., 5th ser., vol. 11, pp. 165-173, February, 1926.
19. Mineral deposits of Rutter map area, Sudbury district, Ontario: Canada, Geol. Survey, Summ. Rept., 1924, pt. C, pp. 89-95, 1 fig., 1926.
20. Are some intrusions replacement deposits? (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 119-121, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 70, February, 1927.
21. Evidence of assimilation and assimilation processes: Jour. Geology, vol. 35, no. 2, pp. 180-182, February-March, 1927.
22. Killarney gneisses and migmatites: Geol. Soc. America, vol. 38, no. 4, pp. 753-770, 2 figs., 5 pls., December 30, 1927.
23. Structure of the Killarnean terrane (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 189-190, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, pp. 143-144, March, 1928.
24. Larger earth deformations: Pan-Am. Geologist, vol. 49, no. 4, pp. 241-258, 3 figs., 1 pl., May, 1928.

Raasch, Gilbert O.

1. Fossil collecting in Michigan and Ontario: Milwaukee, Public Mus., Yearbook 1927, vol. 7, pp. 81-90, 6 figs., June 1, 1928.
2. The Appel collection of lead region minerals [Wisconsin]: Milwaukee, Public Mus., Yearbook 1927, vol. 7, pp. 185-192, 3 pls., June 1, 1928.

Rader, Clarence M. See Estabrook, 4.

Rae, Colin C. See also Washburne, 5.

1. A possible origin of oil: Am. Inst. Min. and Met. Eng., Trans., vol. 68, pp. 1112-1120, 1923; [preprint] no. 1132, 4 pp., February, 1922; (discussion) [preprint] no. 1169, pp. 2-6, June, 1922; abstract, Mining and Metallurgy, no. 182, pp. 64-65, February, 1922.
2. Organic material of carbonaceous shales: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, pp. 333-341, July-August, 1922.
3. Big Sand Draw field, Fremont County, Wyoming: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 12, pp. 1137-1146, 2 figs., December, 1928.

Ragotzy, Federico. See Wittich, 16.

Ramsay, Wilhelm.

1. The probable solution of the climate problem in geology: Smithsonian Inst., Am. Rept., 1924, pp. 237-248, 1 fig., 1925.

Ramsdell, Lewis S.

1. The crystal structure of some metallic sulphides: Am. Mineralogist, vol. 10, no. 9, pp. 281-304, 1 fig., September, 1925.
2. Crystal structure of the pyrite group (abstract): Pan-Am. Geologist, vol. 44, no. 2, p. 152, September, 1925.

Ramsdell, Lewis S.—Continued.

3. The crystal structure of silver sulphide: *Am. Mineralogist*, vol. 12, no 2, pp. 25–26, February, 1927.

Randolph, Helen Fitz.

1. Mammoth Cave and the cave region of Kentucky; with bibliography of Mammoth Cave by Willard Rouse Jillson. 153 pp., illus., Louisville, Ky., The Standard Printing Company, 1924.

Rangel, Manuel.

1. (and Terrones, Alberto). Mineral resources of Durango: *Eng. and Min. Jour.*, vol. 112, no. 5, pp. 168–174, 6 figs., July 30, 1921.

Ransome, Frederick Leslie. See also Jones, E. L., jr., 3.

1. The copper deposits of Ray and Miami, Arizona: U. S. Geol. Survey, Prof. Paper 115, 192 pp., 54 pls. (incl. maps), 29 figs., 1919; abstract, *Washington Acad. Sci., Jour.*, vol. 11, no. 3, pp. 57–58, February 4, 1921.
2. Quicksilver in 1917: U. S. Geol. Survey, Mineral Resources, 1917, pt. 1, pp. 367–424, 2 pls. (maps), March 18, 1919.
3. Quicksilver in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 143–178, 1 fig., October 31, 1919.
4. The functions and ideals of a national geological survey: *Science*, new ser., vol. 51, pp. 173–180, 201–207, February 20 and 27, 1920. *Washington Acad. Sci., Jour.*, vol. 10, no. 4, pp. 85–109, February 19, 1920. *Smithsonian Institution, Ann. Rept.*, 1919, pp. 261–280, 1921. Abstract, *Eng. and Min. Jour.*, vol. 109, pp. 279–280, January 24, 1920.
5. Geologists as expert witnesses: *Econ. Geology*, vol. 15, no. 4, pp. 339–349, June, 1920.
6. Geology and metal mining, with particular reference to the work of the U. S. Geological Survey: *Am. Mining Cong., 23rd Ann. Convention, Rept. of Proc.*, pp. 407–411, 1921.
7. Quicksilver in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 1, pp. 149–180, 1 fig., April 5, 1921.
8. Quicksilver in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 1, pp. 419–439, March 27, 1922.
9. Ore deposits of the Sierrita Mountains, Pima County, Arizona: U. S. Geol. Survey, Bull. 725, pp. 407–428, 4 figs., 4 pls., March 30, 1922.
10. Quicksilver in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 107–117, 1 fig., August 7, 1922.
11. Description of the Ray quadrangle [Arizona]: U. S. Geol. Survey, Geol. Atlas U. S., Ray folio, Arizona (no. 217), 24 pp., 13 figs., 4 maps, illustration sheet, 1923.
12. Geology of the Oatman gold district, Arizona; a preliminary report; U. S. Geol. Survey, Bull. 743, 58 pp., 7 figs., 12 pls. (incl. map), 1923.
13. Ancient high-level potholes near the Colorado River (abstract): *Science*, new ser., vol. 57, p. 593, May 18, 1923.
14. Quicksilver in 1922; with a supplementary bibliography by Isabel P. Evans: U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 113–124, September 18, 1923.
15. Basin Range structure at Jerome, Arizona: *Science*, new ser., vol. 61, pp. 659–660, 1 fig., June 26, 1925.
16. Some possible lines of research on ore deposits: *Econ. Geology*, vol. 20, no. 5, pp. 485–490, August, 1925.

Ransome, Frederick Leslie—Continued.

17. On teaching economic geology: *Econ. Geology*, vol. 21, no. 5, pp. 498-501, August, 1926.
18. Directions of progress in economic geology: *Econ. Geology*, vol. 23, no. 2, pp. 119-131, March-April, 1928.
19. Geology of the St. Francis dam site: *Econ. Geology*, vol. 23, no. 5, pp. 553-563, 8 figs., August, 1928.
20. Geology as related to high dams: *Eng. News-Record*, vol. 101, no. 18, pp. 657-659, November 1, 1928.

Rastall, Robert Heron.

1. Theoretical considerations of the genesis of ore deposits: *Jour. Geology*, vol. 29, no. 6, pp. 487-501, 1 fig., September-October, 1921.
2. Metallogenetic zones: *Econ. Geology*, vol. 18, no. 2, pp. 105-121, 3 figs. March, 1923.

Rathbun, Mary Jane. See also Wade, B., 3.

1. West Indian Tertiary decapod crustaceans: *Carnegie Inst. Washington*, Pub. 291, pp. 157-184, 9 pls., 1919.
2. Additions to West Indian Tertiary decapod crustaceans: *U. S. Nat. Mus., Proc.*, vol. 58, pp. 381-384, 1 pl., 1920.
3. Decapod crustaceans from the Upper Cretaceous of North Carolina: *North Carolina Geol. Survey*, vol. 5, pt. 1, pp. 403-408, 2 pls., 1923.
4. Fossil crabs from the Republic of Haiti: *U. S. Nat. Mus., Proc.*, vol. 63, art. 9, 6 pp., 2 pls., 1923.
5. The fossil stalk-eyed Crustacea of the Pacific slope of North America: *U. S. Nat. Mus., Bull.* 138, 155 pp., 6 figs. 39 pls., 1926.
6. Two new crabs from the Eocene of Texas: *U. S. Nat. Mus., Proc.*, vol. 73, art. 6, 6 pp., 3 pls., 1928.

Raw, Frank.

1. The ontogenies of trilobites and their significance: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 7-35, 131-149, 240; 27 figs., July, August, and September, 1927.

Rayburn, J. M.

1. The deposit of double-thick Upper Freeport coal situated in the valley of Allegheny River in Allegheny, Butler, and Westmoreland counties, Pennsylvania: *Engineers' Soc. Western Pennsylvania, Proc.*, vol. 40, no. 1, pp. 27-44, 6 figs., February, 1924.

Rayleigh, (Lord), Robert John Strutt.

1. (and others). The age of the earth: *Smithsonian Inst., Ann. Rept.*, 1921, pp. 249-260, 1922.

Raymond, Percy Edward.

1. Report on invertebrate paleontology: *Harvard Coll., Mus. Comp. Zool., Ann. Rept.*, 1919-1920, pp. 30-31, 1920.
2. The pygidium of the trilobite: *Geol. Mag.*, vol. 57, pp. 22-25, January, 1920.
3. Middle Ordovician of Virginia and Tennessee (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 137, March 31, 1920.
4. Paleontological collections in the vicinity of Boston (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 205, March 31, 1920.
5. Trilobites as ancestors (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 214-215, March 31, 1920.
6. Some new Ordovician trilobites: *Harvard Coll., Mus. Comp. Zool., Bull.*, vol. 64, no. 2, pp. 273-296, July, 1920.

Raymond, Percy Edward—Continued.

7. Phylogeny of the Arthropoda with especial reference to the trilobites: *Am. Naturalist*, vol. 54, pp. 398–413, September–October, 1920.
8. The appendages, anatomy, and relationships of trilobites: *Connecticut Acad. Arts and Sci., Mem.*, vol. 7, 169 pp., 11 pls., 46 figs., December, 1920. [Foreword by Charles Schuchert.]
9. Report on invertebrate paleontology: Harvard College, *Mus. Comp. Zool., Ann. Rept.* 1920–1921, pp. 27–28, 1921.
10. A contribution to the description of the fauna of the Trenton group: Canada, *Geol. Survey, Museum Bull.* no. 31, 64 pp., 11 pls., February 17, 1921.
11. A new fossil starfish from New England: *Boston Soc. Nat. Hist., Proc.*, vol. 36, no. 4, pp. 165–170, 1 pl., August, 1921.
12. Criteria for species, phylogenies, and faunas of trilobites: *Geol. Soc. America, Bull.*, vol. 32, no. 3, pp. 349–352, September 1, 1921.
13. The history of corals and the “limeless” oceans: *Am. Jour. Sci.*, 5th ser., vol. 2, pp. 343–347, 3 figs., December, 1921.
14. Report on invertebrate paleontology: Harvard Coll., *Mus. Comp. Zoology, Ann. Rept.*, 1921–1922, pp. 19–20, 1922.
15. Seaside notes [formation of trails]: *Am. Jour. Sci.*, 5th ser., vol. 3, pp. 108–114, February, 1922.
16. The *Ceratopyge* fauna in western North America: *Am. Jour., Sci.*, 5th ser., vol. 3, pp. 204–210, March, 1922.
17. Possible habits of cephalopods and trilobites (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 197, March 31, 1922.
18. Trenton of central Tennessee and Kentucky: *Geol. Soc. America, Bull.*, vol. 33, no. 3, pp. 571–585, September 30, 1922; abstract, no. 1, p. 109, March 31, 1922.
19. A trilobite containing color markings [Cambrian, Cherokee County, Alabama]: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 461–464, 1 fig., December, 1922.
20. Report on invertebrate paleontology: Harvard Coll., *Mus. Comp. Zoology, Ann. Rept.* for 1922–1923, pp. 21–22, 1923.
21. New fossils from the Chapman sandstone: *Boston Soc. Nat. Hist., Proc.*, vol. 36, no. 7, pp. 467–472, 1 pl., June, 1923.
22. Report on invertebrate paleontology: Harvard College, *Mus. Comp. Zoology, Ann. Rept.* for 1923–1924, pp. 22–23, 1924.
23. New Upper Cambrian and lower Ordovician trilobites from Vermont: *Boston Soc. Nat. Hist., Proc.*, vol. 37, no. 4, pp. 389–406, 3 pls., July, 1924; *Vermont, State Geologist, Fourteenth Rept.*, 1923–1924, pp. 137–203, 3 pls., 1924.
24. The oldest coral reef: *Vermont, State Geologist, Fourteenth Rept.*, 1923–1924, pp. 72–76, 1924.
25. Report on invertebrate paleontology: Harvard Coll., *Mus. Comp. Zoology, Ann. Rept. Director*, 1924–25, pp. 21–22, 1925.
26. A possible factor in the formation of dolomite (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 168, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 158, March 30, 1925.
27. Mechanical factors in the evolution of the tetrabranchiate cephalopods (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 228–239, March 30, 1925.
28. Some trilobites of the lower middle Ordovician of eastern North America: Harvard Coll., *Mus. Comp. Zoology, Bull.*, vol. 67, no. 1, pp. 1–180, 10 pls., April, 1925.

Raymond, Percy Edward—Continued.

29. The Anaspida and the problem of the origin of the vertebrates: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 433-436, November, 1925.
30. Two new fossil fishes from Alberta: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 551-555, 2 figs., December, 1925.
31. A new oyster from the Cretaceous of Cuba: *Boston Soc. Nat. Hist., Occ. Papers*, vol. 5, pp. 183-185, 1 pl., December, 1925.
32. Report on invertebrate paleontology: *Harvard Coll., Mus. Comp. Zoology, Ann. Rept. Director*, 1925-26, pp. 21-22, 1926.
33. Report on invertebrate paleontology: *Harvard Coll., Mus. Comp. Zoology, Ann. Rept. Director*, 1926-27, pp. 20-21, 1927.
34. The significance of red color in sediments: *Am. Jour. Sci.*, 5th ser., vol. 13, pp. 234-251, March, 1927; vol. 14, pp. 157-158, August, 1927.
35. The ontogenies of trilobites and their significance (discussion): *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 168-170, February, 1928.
36. Two new Cambrian trilobites: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 309-313, April, 1928.
37. The brachipods of the Lenoir and Athens formations of Tennessee and Virginia: *Harvard Coll., Mus. Comp. Zool., Bull.*, vol. 68, no. 6, pp. 293-309, 3 pls., May, 1928.
38. Report on invertebrate paleontology: *Harvard Coll., Mus. Comp. Zoology, Ann. Rept. Director*, 1927-28, p. 15, 1928.

Read, L. C.

1. The Cordilleran ice sheet: *Natural History, Jour. Am. Mus. Nat. Hist.*, vol. 21, no. 3, pp. 251-254, May-June, 1921.

Reagan, Albert B.

1. Correlation of the formations described in the Fort Apache region in Arizona with similar formations in other parts of the State: *Kansas Acad. Sci., Trans.*, vol. 29, pp. 178-180, 1920.
2. The Mine Centre mining district, Ontario, and adjacent territory in the United States: *Kansas Acad. Sci., Trans.*, vol. 29, pp. 181-183, 1920.
3. Glacial deposits in Pine River valley, Colorado: *Indiana Acad. Sci., Proc.*, 1919, pp. 353-354, 1921.
4. Probable Eocene glacial deposits in the Fort Apache region, Arizona: *Indiana Acad. Sci., Proc.*, 1919, pp. 355-358, 1921.
5. Probable Eocene glacial deposits in the Fort Apache region, Arizona: *Kansas Acad. Sci., Trans.*, vol. 30, pp. 126-129, 1922.
6. Glacial deposits in Pine River valley, Colorado: *Kansas Acad. Sci., Trans.*, vol. 30, pp. 129-130, 1922.
7. Cretacic Mollusca of Pacific slope: *Pan-Am. Geologist*, vol. 41, no. 3, pp. 179-189, 4 pls., April, 1924.
8. Stratigraphy of the Hopi Buttes volcanic field, Arizona: *Pan-Am. Geologist*, vol. 41, no. 5, pp. 355-366, 1 fig. (map), June, 1924.
9. Recent changes in the plateau region: *Science, new ser.*, vol. 60, pp. 283-285, September 26, 1924.
10. Stream aggradation through irrigation: *Pan-Am. Geologist*, vol. 42, no. 5, pp. 335-344, December, 1924.
11. Geology of Fort Apache region, Arizona (abstract): *Pan-Am. Geologist*, vol. 42, no. 5, p. 375, December, 1924.
12. Identification of two fossil leaves from Iowa, one from Arizona, and a "tree trunk" from Kansas: *Indiana Acad. Sci., Proc.*, vol. 34, pp. 141-142, 1 fig., 1925.

Reagan, Albert B.—Continued.

13. Petrified forest of Ganado [Arizona]: *Pan-Am. Geologist*, vol. 43, no. 2, pp. 97–98, March, 1925.
14. Life and mythology of Ganado petrified forest: *Pan-Am. Geologist*, vol. 43, no. 3, pp. 238–239, April, 1925.
15. Late Cretacic formations of Black Mesa, Arizona: *Pan-Am. Geologist*, vol. 44, no. 4, pp. 285–294, 1 pl., November, 1925.
16. Description of some fossil plants from the Stanford paleontological collection: *Indiana Acad. Sci., Proc.*, vol. 35, pp. 121–123, 7 figs., 1926.
17. Fossil plants from St. John collection (abstract): *Pan-Am. Geologist*, vol. 45, no. 3, p. 251, April, 1926.
18. Extension of Cretacic Laramie formation into Arizona: *Pan-Am. Geologist*, vol. 46, no. 3, pp. 193–194, 1 pl., October, 1926.
19. Fossils from the Mancos-Dakota-Tununk formation in the vicinity of Steamboat, Arizona: *Indiana Acad. Sci., Proc.*, vol. 36, pp. 119–127, 26 figs., 1927.
20. Contributions to the geology of the Navajo country, Arizona, with notes on the archeology (abstract): *Stanford Univ., Abstracts of Dissertations*, 1924–1926, vol. 1, pp. 138–150, 1 pl., June, 1927.
21. Garnets in the Navajo country: *Am. Mineralogist*, vol. 12, no. 11, pp. 414–415, November, 1927.
22. Mineral resources of the Navajo country [northeastern Arizona]: *Min. Jour. (Phoenix, Ariz.)*, vol. 11, no. 18, pp. 3–4, 15, February 15, 1928.
23. Origin of small prairies on Olympic Peninsula: *Pan-Am. Geologist*, vol. 49, no. 4, pp. 259–262, May, 1928.
24. Dakotan fossils incorporated in Recent deposits: *Pan-Am. Geologist*, vol. 50, no. 1, pp. 69–70, August, 1928.

Reber, Louis Ehrhart, jr.

1. Geology and ore deposits of the Jerome district [Yavapai County, Arizona]: *Am. Inst. Min. and Met. Eng., Trans.* [preprint no. 984], 24 pp., 1 fig. (map), 1 pl. [1920]; vol. 66, pp. 3–26, 1 fig. (map), 1922. Abstract, *Mining and Metallurgy*, no. 161, sec. 1, pp. 25–27, May, 1920: *Eng. and Min. Jour.*, vol. 110, no. 12, p. 566, September 18, 1920.

Redfield, Arthur Huber.

1. The Isthmian oil fields of Mexico: *Eng. and Min. Jour.*, vol. 111, no. 12, pp. 510–514, 1 fig., March 19, 1921; *Bol. Petróleo*, vol. 11, no. 4, pp. 293–303, map, April, 1921.
2. Petroleum in the Canadian Northwest: *Eng. and Min. Jour.*, vol. 111, no. 21, pp. 871–875, 1 fig., May 21, 1921.
3. The petroleum possibilities of Guatemala: *Eng. and Min. Jour.*, vol. 112, no. 14, pp. 540–544, 2 figs., October 1, 1921.
4. Petroleum reserves of the West Indies (with discussion): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 68, pp. 1082–1090, 1923; [preprint] no. 1166, 6 pp., June, 1922; abstract, *Mining and Metallurgy*, no. 186, p. 39, June, 1922.
5. Petroleum reserves of Central America: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 68, pp. 1004–1013, 1923; [preprint] no. 1178, 10 pp., July, 1922; abstract, *Mining and Metallurgy*, no. 187, pp. 35–36, July, 1922.

Redfield, Arthur Huber—Continued.

6. Graphite in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 2, pp. 63-68, September 11, 1923.
7. The petroleum possibilities of Costa Rica: Econ. Geology, vol. 18, no. 4, pp. 354-381, 2 figs., June-July, 1923; Revista Económica, San Salvador, año 11, no. 3, pp. 117-118, January, no. 4, pp. 174-178, 1 pl., February, no. 5, pp. 230-236, March, 1924.
8. The petroleum possibilities of Honduras: Econ. Geology, vol. 18, no. 5, pp. 474-493, 1 fig., August, 1923; Revista Económica, año 11, no. 7, pp. 341-346, May; no. 8, pp. 397-401, 1 fig., June; no. 9, pp. 453-455, July, 1924.
9. The petroliferous systems of South America, Central America, and the West Indies: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2, pp. 1207-1244 [1924].
10. The petroliferous provinces of the United States (abstract): Washington Acad. Sci., Jour., vol. 17, no. 9, pp. 235-237, May 4, 1927.

Redfield, John S.

1. Mineral resources in Oklahoma: Oklahoma Geol. Survey, Bull. no. 42, 130 pp., 8 figs., 34 pls. (incl. map), May, 1927.
2. Oklahoma's mineral production in 1925: Oklahoma Acad. Sci., Proc., vol. 7 (Oklahoma, Univ., Bull., new ser., no. 409), pp. 155-157 [1928].

Redmon, H. E. See Ruedemann, P., 2.

Redwood, Boverton.

1. Petroleum; a treatise on the geographical distribution and geological occurrence of petroleum and natural gas . . . 4th edition, 3 vols. London, Charles Griffin & Company, 1922. [The part dealing with the United States was contributed by various members of the United States Geological Survey.]

Reed, Burleigh B.

1. (and Knight, Nicholas). Some American dolomites: Iowa Acad. Sci., Proc., vol. 26, pp. 377-378 [1920].

Reed, Fredda Doris.

1. Flora of an Illinois coal ball: Bot. Gazette, vol. 81, no. 4, pp. 460-469, 1 fig., 1 pl., June, 1926; abstract, Chicago, Univ., Abstracts of Theses, Sci., Ser., vol. 3, pp. 299-302, April, 1927.

Reed, Lyman C.

1. The Welsh, Louisiana, oil field: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 3, pp. 464-478, 6 figs., May-June, 1925; Geology of salt dome oil fields, pp. 437-451, 6 figs., 1926.
2. Possible evidence of Pleistocene ice action in southeast Texas: Am. Jour. Sci., 5th ser., vol. 15, pp. 520-521, June, 1928.

Reed, R. D. See also Rogers, A. F., 25; Twenhofel, 29.

1. Subsurface studies: Oklahoma Acad. Sci., Proc., vol. 2 (Oklahoma, Univ., Bull., new ser. no. 247), pp. 80-85, October 1, 1922.
2. Some suggestions in regard to Pennsylvania paleogeography in the Henryetta district, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 1, pp. 50-57, 2 figs., January-February, 1923.
3. (and Meland, Norman). The Verden sandstone [Oklahoma]: Jour. Geology, vol. 32, no. 2, pp. 150-167, 4 figs., February-March, 1924.
4. Some methods for heavy mineral investigations: Econ. Geology, vol. 19, no. 4, pp. 320-337, 1 fig., June-July, 1924.

Reed, R. D.—Continued.

5. Rôle of heavy minerals in the Coalinga Tertiary formations: *Econ. Geology*, vol. 19, no. 8, pp. 730–749, 2 figs., December, 1924.
6. The post-Monterey disturbance in the Salinas Valley, California: *Jour. Geology*, vol. 33, no. 6, pp. 588–607, 3 figs., August–September, 1925.
7. Miocene paleogeography in the central Coast Ranges [California]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 2, pp. 130–137, 1 fig., February, 1926.
8. Effect of the wind in San Joaquin and Salinas valleys (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 214–215, March 30, 1926.
9. Aragonite concretions from the Kettleman Mills, California: *Jour. Geology*, vol. 34, no. pp. 820–833, 2 figs., November–December, 1926.
10. Wind and soil in the Gabilan Mesa [in central Coast Ranges, California]: *Jour. Geology*, vol. 35, no. 1, pp. 84–88, 1 fig., January–February, 1927.
11. Phosphate beds in the Monterey shales (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 195–196, March 30, 1927.
12. (and Bailey, J. P.). Subsurface correlation by means of heavy minerals: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 4, pp. 359–368, 4 figs., April, 1927.
13. A siliceous shale formation from southern California: *Jour. Geology*, vol. 36, no. 4, pp. 342–361, 4 figs., May–June, 1928.
14. The occurrence of feldspar in California sandstones: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 10, pp. 1023–1024, October, 1928.

Reeder & Company.

1. The Appalachian oil field. 21 pp., New York, 1920.

Reeds, Chester Albert. See also Osborn, 19, 23; Sayles, 11; Science Service, 8.

1. Recent movements of Swiss and Alaskan glaciers: *Natural History (Jour. Am. Mus. Nat. Hist.)*, vol. 21, no. 3, pp. 269–271, May–June, 1921.
2. Geology of New York City and its vicinity: *Natural History (Jour. Am. Mus. Nat. Hist.)*, vol. 22, no. 5, pp. 431–445, 11 figs., September–October, 1922; *Am. Mus. Nat. Hist., Guide Leaflet series no. 56*, 15 pp., 13 figs., March, 1925.
3. Banded postglacial clay near New York City (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 92–93, March 30, 1923.
4. Seasonal records of geologic time as noted in annual rings of trees, banded glacial clays, and certain deposits made during periods of arid climate: *Natural History*, vol. 23, no. 4, pp. 371–380, 8 figs., July–August, 1923.
5. Postglacial clays at Little Gerry, New Jersey (abstract, with discussion by E. O. Hovey): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 66–67, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, pp. 136–137, March, 1924.
6. Glacial Lake Hackensack and adjacent lakes (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 155, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 151, March 30, 1925.
7. The varved clays at Little Ferry, New Jersey: *Am. Mus. Novitates*, no. 209, 16 pp., 10 figs., February 17, 1926.
8. Subterranean streams of the “Endless Caverns,” Virginia (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 171, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 167, March 30, 1925.

Reeds, Chester Albert—Continued.

9. Varved clays at Haverstraw, New York (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 180-181, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, pp. 169-170, March 30, 1926.
10. New York City as a field for earthquake study: *Science*, new ser., vol. 63, pp. 415-418, April 23, 1926.
11. The Arbuckle Mountains, Oklahoma: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 26, no. 5, pp. 463-474, 11 figs. (incl. map), September-October, 1926; *Oklahoma Geol. Survey, Circular no. 14*, 15 pp., 11 figs., March, 1927.
12. Glacial lakes and clays near New York City: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 27, no. 1, pp. 55-64, 12 figs., January-February, 1927.
13. James Furman Kemp, 1859-1926: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 27, no. 1, pp. 105-107, portr., January-February, 1927.
14. Desert landscapes of northwestern Nevada: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 27, no. 5, pp. 449-461, 22 figs., September-October, 1927.
15. Varved glacial clays at Haverstraw, New York (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, p. 148, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 217-218, March 30, 1928.
16. Rivers that flow underground: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 28, no. 2, pp. 131-146, 17 figs., March-April, 1928.
17. Volcanoes in action: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 28, no. 3, pp. 302-317, 12 figs., May-June, 1928.
18. Living glaciers: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 28, no. 4, pp. 379-393, 16 figs., July-August, 1928.

Reese, John F. See also *Pennsylvania T. G. S.*, 1.

1. (and Sisler, James D.). Bituminous coal fields of Pennsylvania; introductory volume, part 3, Coal resources: *Pennsylvania Geol. Survey*, Fourth ser., *Bull. M6 pt. 3*, 153 pp., 4 pls., 1928.

Reeside, John Bernard, jr. See also Baker, A. A., 1; Bassler, H., 2; Bauer, C. M., 1; Darton, 19; Dobbin, 2, 4; Gilluly, 2, 4; Spieker, 3, 5.

1. Some American Jurassic ammonites of the general *Quenstedticeras*, *Cardioceras*, and *Amoeboceras*, family *Cardioceratidae*: *U. S. Geol. Survey, Prof. Paper 118*, 64 pp., 24 pls., 1 fig., 1919.
2. (and Bassler, Harvey). Phases of the Carboniferous and Triassic of southwestern Utah (abstract): *Washington Acad. Sci., Jour.*, vol. 11, no. 18, pp. 445-446, November 4, 1921.
3. Note on the stratigraphy of San Juan County, New Mexico, with special reference to the occurrence of dinosaurs: *Smithsonian Misc. Coll.*, vol. 72, no. 14, pp. 4-6, January 31, 1922.
4. (and Bassler, Harvey). Stratigraphic section in southwestern Utah and northwestern Arizona: *U. S. Geol. Survey, Prof. Paper 129*, pp. 53-77, 1 fig., 5 pls., March, 1922.
5. The fauna of the so-called Dakota formation of northern central Colorado and its equivalent in southeastern Wyoming: *U. S. Geol. Survey, Prof. Paper 131*, pp. 199-207, 6 pls., April 23, 1923.
6. A new fauna from the Colorado group of southern Montana: *U. S. Geol. Survey, Prof. Paper 132*, pp. 25-33, 11 pls., November 5, 1923.

Reeside, John Bernard, jr.—Continued.

7. Notes on the geology of Green River valley between Green River, Wyoming, and Green River, Utah: U. S. Geol. Survey, Prof. Paper 132, pp. 35-50, 6 figs., November 30, 1923.
8. Upper Cretaceous and Tertiary formations of the western part of the San Juan Basin of Colorado and New Mexico: U. S. Geol. Survey, Prof. Paper 134, pp. 1-70, 5 figs., 4 pls. (incl. map), 1924.
9. A new nautiloid cephalopod, *Eutrephoceras sloani*, from the Eocene of South Carolina: U. S. Nat. Mus., Proc., vol. 65, art. 5, 4 pp., 2 pls., 1924.
10. A rare Cretaceous sea urchin, *Scutellaster cretaceus* Cragin: U. S. Nat. Mus., Proc., vol. 66, art. 20, 4 pp., 2 figs., 1 pl., 1924.
11. A comparison of the genera *Metaplacenticeras* Spath and *Placenticeras* Meek: U. S. Geol. Survey, Prof. Paper 147, pp. 1-5, 2 pls., August 25, 1926.
12. The cephalopods of the Eagle sandstone and related formations in the western interior of the United States: U. S. Geol. Survey, Prof. Paper 151, 87 pp., 1 fig., 45 pls., 1927.
13. Cephalopods from the lower part of the Cody shale of Oregon Basin, Wyoming: U. S. Geol. Survey, Prof. Paper 150, pp. 1-19, 8 pls., October 6, 1927.
14. The scaphites, an Upper Cretaceous ammonite group: U. S. Geol. Survey, Prof. Paper 150, pp. 21-40, 3 pls., October 8, 1927.
15. An *Acanthoceras rhotomagense* fauna in the Cretaceous of the Western Interior: Washington Acad. Sci., Jour., vol. 17, no. 17, pp. 453-454, October 19, 1927.
16. Two new unionid pelecypods from the upper Triassic: Washington Acad. Sci., Jour., vol. 17, no. 19, pp. 476-478, 1 fig., November 4, 1927.
17. New Cretaceous mollusks from Colorado and Utah: Washington Acad. Sci., Jour., vol. 18, no. 11, pp. 306-313, 2 pls., June 4, 1928.

Reeves, Frank.

1. Geology of the Cement oil field, Caddo County, Oklahoma: U. S. Geol. Survey, Bull. 726, pp. 41-85, 4 figs., 7 pls. (incl. maps), August 10, 1921; abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 11, no. 21, p. 510, December 19, 1921.
2. Geology of the Ranger oil field, Texas: U. S. Geol. Survey, Bull. 736, pp. 111-170, 2 figs., 17 pls., 1922.
3. Oil fields of central Montana: [U. S. Geol. Survey], [Press Notice], 6 pp., map [1921?]. [Mimeographed.]
4. Oil fields of central Montana: U. S. Geol. Survey, [Press Notice], 4 pp., April 22, 1921. [Mimeographed.]
5. Oil fields of central Montana: U. S. Geol. Survey, [Press Notice], 3 pp., map, May 16, 1921. [Mimeographed.]
6. Geology of northern Fergus County, Montana: U. S. Geol. Survey, Press Notice, 7 pp., map [1922?]. [Mimeographed.]
7. The structure of the Bearpaw Mountains, Montana: Am. Jour. Sci., 5th ser., vol. 8, pp. 296-311, 5 figs. (incl. maps), October, 1924; abstract, Geol. Soc. America, Bull., vol. 35, no. 1, p. 93, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 146, March, 1924.
8. Geology and possible oil and gas resources of the faulted area south of the Bearpaw Mountains, Montana: U. S. Geol. Survey, Bull. 751, pp. 71-114, 5 figs., 5 pls. (incl. map), October 13, 1924.

Reeves, Frank—Continued.

9. Shallow folding and faulting around the Bearpaw Mountains: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 187-200, 6 figs., September, 1925; abstract, *Pan-Am. Geologist*, vol. 44, no. 1, pp. 78-79, August, 1925.
10. Geology of the Cat Creek and Devils Basin oil fields and adjacent areas in Montana: *U. S. Geol. Survey, Bull.* 786, pp. 39-95, 6 figs., 3 pls. (incl. maps), 1927.
11. The landslide origin of the thrust faults around Bearpaw Mountains (abstract): *Washington Acad. Sci., Jour.*, vol. 17, no. 5, p. 127, March 4, 1927.
12. Thrust faulting adjacent to the Highwood Mountains, Montana (abstract): *Washington Acad. Sci., Jour.*, vol. 17, no. 9, p. 232, May 4, 1927.
13. The present status of the carbon-ratio theory: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 6, p. 637, June, 1927.
14. The carbon-ratio theory in the light of Hilt's law: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 8, pp. 795-823, 5 figs., August, 1928.

Reeves, John R.

1. The Anderson esker [Indiana]: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 65-68, 1 fig., July, 1920.
2. Oil shales of Indiana: *Eng. and Min. Jour.*, vol. 110, no. 20, pp. 954-955, November 13, 1920.
3. Preliminary report on the oil shales of Indiana. In *Handbook of Indiana geology* (Indiana, Dept. Conservation, Pub. no. 21), pp. 1059-1105, 16 figs., Indianapolis, 1922.
4. New Albany oil shale of Indiana: *Eng. and Min. Jour.-Press*, vol. 114, no. 13, p. 554, September 23, 1922.
5. Oil shales of Indiana: Indiana University, Department of Geology, 92 pp., June, 1923. [Mimeographed.]
6. A section through the New Albany shale: Indiana, Dept. Conservation, 4th Ann. Rept., pp. 18-21, 1 fig., 1923.
7. The production of oil in Indiana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 2, pp. 317-325, 1 fig. (map), March-April, 1925.
8. The value of relief models and a simple method for their construction: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 2, pp. 340-341, March-April, 1925.
9. An inclusion of petroleum in a fossil cast [Bloomington, Indiana]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, p. 667, May-June, 1925.
10. Concerning the accumulation of oil: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 6, pp. 1023-1024, September, 1925.

Reger, David Bright. See also Cottingham, 2; White, D., 1; Willis, B., 4.

1. Webster County and portion of Mingo district, Randolph County, south of Valley Fork of Elk River: *West Virginia Geol. Survey [County reports]*, 682 pp., 24 figs., 35 pls., 2 maps, 1920.
2. Recent oil and gas developments in West Virginia: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 4, no. 1, pp. 27-31, 1920.
3. Nicholas County: *West Virginia Geol. Survey [County Reports]*, 847 pp., 2 maps, 34 pls., 2 figs., 1921.
4. Oil and gas development in West Virginia for the year 1920: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, pp. 80-84, January-February, 1921.

Reger, David Bright—Continued.

5. Carbon ratios of coals in West Virginia oil fields: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1056, 5 pp., 1 fig., February, 1921; abstract, *Mining and Metallurgy*, no. 170, p. 39, 1 fig., February, 1921; discussion by J. T. Singewald, *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1073, pp. 33–34, May, 1921; *Trans.*, vol. 65, pp. 522–527, 1 fig., 1921.
6. Tucker County: *West Virginia Geol. Survey*, 542 pp., 11 figs., 16 pls., 2 maps, 1923.
7. Mineral and Grant counties: *West Virginia Geol. Survey*, 866 pp., 31 figs., 43 pls., 4 maps (in atlas), 1924.
8. First test of the Clinton oil sand in West Virginia: *Am. Inst. Min. and Met. Eng., Trans.* [preprint], no. 1447, pp. 72–77, 1 fig., April, 1925.
9. (assisted by Paul H. Price). Mercer, Monroe, and Summers counties: *West Virginia Geol. Survey*, 963 pp., 30 figs., 34 pls., 6 maps (in atlas), 1926.
10. Paleobotany and paleontology; introduction [and list of fossil localities]: *West Virginia Geol. Survey, Mercer, Monroe, and Summers counties*, pp. 799–836, 844–846, 1926.
11. Smokeless coals of West Virginia: *Coal Age*, vol. 29, no. 18, pp. 633–637, 7 figs., May 6, 1926.
12. Conglomerate rocks of West Virginia: *West Virginia Acad. Sci., Proc.*, vol. 1, no. 1 (*W. Va. Univ. Bull.*, ser. no. 27, no. 1), pp. 57–64, August, 1926.
13. Pocono stratigraphy in the Broadtop Basin of Pennsylvania: *Geol. Soc. America, Bull.*, vol. 38, no. 2, pp. 397–410, June 30, 1927; abstract, no. 1, pp. 156–157, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 2, p. 155, March, 1927.
14. The Copley oil pool of West Virginia: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 6, pp. 581–599, 5 figs., June, 1927.
15. The Tygart Valley Devonian trees of West Virginia: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 49–57, January, 1928.
16. The Cheat Mountain coal field of Randolph County, West Virginia: *West Virginia Geol. Survey, Bull.* 3, 34 pp., map, 1928.
17. The Cheat Mountain coal field of Randolph County, West Virginia: *West Virginia Acad. Sci., Proc.*, vol. 2 (*West Virginia Univ. Bull.*, ser. no. 29, no. 1), pp. 118–131, August, 1928.

Reid, Harry Fielding. See also *Am. Geophysical Union*, 1; *Bowie*, 24.

1. (and Taber, Stephen). Recent earthquakes of Porto Rico (abstract): *Geol. Soc. America, Bull.*, vol. 30, no. 1, pp. 83–84, March 31, 1919.
2. (and Taber, Stephen). The Porto Rico earthquake of 1918, with descriptions of earlier earthquakes: *U. S., 66th Cong., 1st Sess., H. R. Doc.* no. 269, 74 pp., 8 pls., 1919.
3. (and Taber, Stephen). The Porto Rico earthquake of October–November, 1918: *Seismol. Soc. America, Bull.*, vol. 9, no. 4, pp. 95–127, 8 pls., December, 1919.
4. (and Taber, Stephen). The Virgin Islands earthquakes of 1867–1868: *Seismol. Soc. America, Bull.*, vol. 10, no. 1, pp. 9–30, 3 figs., March, 1920.
5. The distribution of land and water on the earth: *Am. Philos. Soc., Proc.*, vol. 59, no. 4, pp. 313–324, 3 figs., 1920.

Reid, Harry Fielding—Continued.

6. The problems of seismology: Nat. Acad. Sci., Proc., vol. 6, no. 10, pp. 555-561, October 15, 1920. Nat. Research Council, Reprint and Circular Ser., no. 11, pp. 555-561, 1920.
7. Orogenic forces (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 33, March 31, 1921.
8. Some astronomical tests of the planetesimal hypothesis (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 140, March 31, 1922.
9. Isostasy and earth movements: Geol. Soc. America, Bull., vol. 33, no. 2, pp. 317-326, June 30, 1922.
10. Note on the record of surface waves: Seismol. Soc. America, Bull., vol. 13, no. 3, pp. 107-108, September, 1923.
11. The movement in the slides [Panama Canal Zone]: Nat. Acad. Sci., Mem., vol. 18, pp. 77-84, 1924.
12. The planetesimal hypothesis and the solar system: Am. Jour. Sci., 5th ser., vol. 7, pp. 37-64, 4 figs., January, 1924.
13. The seismograph and friction (abstract): Nat. Research Council, Bull., vol. 7, pt. 5, no. 41, pp. 97-98, January, 1924.
14. The interpretation of the seismogram: Nat. Research Council, Bull., no. 53 (vol. 10, pt. 3), pp. 50-51, July, 1925.
15. The influence of friction on seismographs: Seismological Soc. America, Bull., vol. 15, no. 3, pp. 222-241, 2 figs., September, 1925.
16. Earthquakes and the weather: Geog. Rev., vol. 16, no. 1, pp. 152-153, January, 1926.
17. Dynamics of faulting (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 166, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, pp. 164-165, March, 1926.
18. Note on the influence of the moon on earthquakes: Nat. Research Council, Bull., no. 56 (vol. 11, pt. 2), pp. 73-74, November, 1926.
19. The fundamentals of isostasy (abstract): Science, new ser., vol. 65, p. 480, May 13, 1927.

Reid, John Allen.

1. Origin of manganese deposits of Lunenburg County, Nova Scotia: Eng. and Min. Jour.-Press, vol. 115, no. 7, pp. 307-308, February 17, 1923.
2. Discussion on "The gold deposits of Nova Scotia," by Sir Stopford Brunton: Canadian Inst. Min. and Met., Bull., no. 173, pp. 1039-1044, September, 1926.
3. A feldspar-chalcopyrite rock-ore (discussion): Eng. and Min. Jour., vol. 123, no. 19, p. 771, May 7, 1927.

Reid, John T.

1. Hanging rocks and earthquakes: Eng. and Min. Jour.-Press, vol. 118, no. 8, p. 305, August 23, 1924.

Reid, W. Spencer. See Varley, 2.

Reinecke, Leopold.

1. Road materials in the vicinity of Regina, Saskatchewan: Canada, Geol. Survey, Mem. 107 (geol. ser. 90), 28 pp., 2 pls., 3 figs., map, 1919.
2. Undeveloped mineral resources of the Clinton district, B. C.: Canadian Min. Inst., Bull. no. 88, pp. 871-876, 1 fig., August, 1919; no. 89, pp. 940-950, 3 figs., September, 1919; no. 90, pp. 1039-1049, October, 1919; Trans., vol. 22, pp. 341-367, 6 figs. [1920].

Reinecke, Leopold—Continued.

3. Mineral deposits between Lillooet and Prince George, British Columbia: Canada, Geol. Survey, Mem. 118, 129 pp., 18 figs., 17 pls., 1920.

Reinhard, Max.

1. Interprétation tectonique de la région pétrolifère de la vallée de Santa Clara en Californie et considérations théoriques sur les gîtes de pétrole: Arch. sci. phys. nat., 5th ser., vol. 1, pp. 63–78, 2 pls. (incl. map), January–February, 1919.

Reinhart, Philip W.

1. Origin of the Sespe formation of South Mountain, California: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 7, pp. 743–746, July, 1928.

Reinholt, Oscar Halvorsen.

1. Oildom; its treasures and tragedies. . . Part one, 128 pp., illus., copyright, 1924; Part two, pp. 129–384 + [13 pp., index], Philadelphia, David McKay Co., copyright, 1927.

Reiter, A. F.

1. Present status of copper mining in Garfield County: Oklahoma, Univ., Bull. (Proc. Oklahoma Acad. Sci., 1910–1920), new ser. no. 220, p. 67, July 15, 1921.
2. Manganese deposits in Custer County: Oklahoma, Univ., Bull. (Proc. Oklahoma Acad. Sci., 1910–1920), new ser. no. 220, p. 68, July 15, 1921.
3. Anticlinal folds in central Custer County: Oklahoma, Univ., Bull. (Proc. Oklahoma Acad. Sci., 1910–1920), new ser. no. 220, pp. 68–69, July 15, 1921.

Renick, B. Coleman. See also Meinzer, 15.

1. Correlation of the Pottsville and lower Allegheny formations in western Pennsylvania (abstract with discussion by G. H. Ashley): Geol. Soc. America, Bull., vol. 34, no. 1, pp. 68–69, March 30, 1923.
2. The correlation of the lower Allegheny-Pottsville section in western Pennsylvania: Jour. Geology, vol. 32, no. 1, pp. 64–80, 4 figs., January–February, 1924; abstract, Chicago, Univ., Abstracts of Theses, Sci. ser., vol. 1, pp. 297–304, 1 fig., October, 1925.
3. Base exchange in ground water by silicates as illustrated in Montana: U. S. Geol. Survey, Water-Supply Paper 520, pp. 53–72, 1 fig., 3 pls., 1924.
4. Additional ground-water supplies for the city of Enid, Oklahoma: U. S. Geol. Survey, Water-Supply Paper 520, pp. 15–26, 3 figs. (incl. map), 1924.
5. Some geochemical relations of ground water and associated natural gas in the Lance formation, Montana: Jour. Geology, vol. 32, no. 8, pp. 668–684, 3 figs., November–December, 1924.
6. Ground water in Sandoval County, New Mexico: [U. S. Geol. Survey], (Press Notice), 2 pp., December 26, 1924. [Mimeographed.]
7. Airplanes for geologic explorations in inaccessible regions: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 6, pp. 947–957, 4 pls., September, 1925.
8. California oil field waters (discussion): Econ. Geology, vol. 20, no. 7, pp. 697–698, November, 1925.

Renick, B. Coleman—Continued.

9. The geology and artesian water prospects in the San Jose-Rio Puerco valley, in Sandoval County, New Mexico: New Mexico, State Engineer, 7th Bienn. Rept., pp. 61-75, 1 fig. [1926].
10. Geology and ground water resources of the drainage basin of the Rio Penasco above Hope, New Mexico (with an introduction by O. E. Meinzer): New Mexico, State Engineer, 7th Bienn. Rept., pp. 103-138, 4 figs., 1 pl. [1926].
11. Petrology of a portion of Malheur County, Oregon (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 151-152, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 158, March, 1926.
12. Recently discovered salt domes in east Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 5, pp. 527-547, 1 pl., May, 1928.

Renner, George T., jr.

1. The physiographic interpretation of the Fall Line: Geog. Rev., vol. 17, no. 2, pp. 278-286, 13 figs., April, 1927.
2. The fall line of the eastern United States: Science, new ser., vol. 66, pp. 356-357, October 14, 1927.

Repetti, William C. See Macelwane, 19, 20.

Resser, Charles E.

1. Bibliographic studies of the Cambrian (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 213, March 31, 1920.
2. Memorial of Anthony W. Vogdes: Geol. Soc. America, Bull., vol. 35, no. 1, p. 184, March 30, 1924.
3. Subdivisions of the Cambrian (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 185-186, March 30, 1924.
4. The Cambrian in the Rocky Mountains (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, p. 130, March 4, 1927.
5. Cambrian geology of the Rocky Mountains: Smithsonian Inst., Explorations and Field Work in 1927, pp. 17-20, 3 figs., 1928. (Pub. 2957.)
6. Cambrian fossils from the Mohave Desert: Smithsonian Misc. Coll., vol. 81, no. 2, 14 pp., 3 pls., July 5, 1928.

Rettger, R. E.

1. The bauxite deposits of southeastern Alabama: Econ. Geology, vol. 20, no. 7, pp. 671-686, 3 figs., November, 1925.

Reyes, Alicia E.

1. Ejemplar número 213 del museo paleontológico del Instituto Geológico de México: Mexico, Inst. Geol., Anales, t. 2, nos. 6-10, 2 pls., 1927.

Reynolds, Donald D.

1. (and Leavitt, David H.) A scree of Triassic age [Connecticut Valley, Massachusetts]: Am. Jour. Sci., 5th ser., vol. 13, pp. 161-171, February, 1927.

Rhodes, E. O.

1. The Paint Creek uplift: Kentucky, Dept. Geology and Forestry, Ser. V [of Ky. Geol. Survey], Mineral and Forest Resources of Kentucky, vol. 1, no. 3, pp. 243-250, map, October 1, 1919.

Rice, E. M. See Thomas, N. L., 3.

Rice, George S.

1. (and others). Analyses of Iowa coals. U. S. Bur. Mines, Tech. Paper 269, 26 pp., 1921.

Rice, George S.—Continued.

2. Some problems in ground movement and subsidence: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 69, pp. 374–393, 14 figs., 1923; [pre-print] no 1271, pp. 1–20, 14 figs., September, 1923.

Rice, Marion. See also Berkey, 3.

1. Petrographic notes on the ore deposits of Jerome, Arizona: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 61, pp. 60–65, 9 figs., 1920.

Rice, William North, 1845–1928. See also Foye, 5.

1. (and Foye, Wilbur Garland). Guide to the geology of Middletown, Connecticut, and vicinity: *Connecticut, State Geol. and Nat. Hist. Survey, Bull.*, no. 41, 137 pp., 33 figs., (incl. maps), 3 pls., 1927.

Rich, Arthur.

1. Geology of southeastern New Mexico: *Oil and Gas Jour.*, vol. 25, no. 8, pp. 130–131, map, July 15, 1926.

Rich, John Lyon. See also Barwick, 1; Lee, W. T., 3; Moore, R. C., 17.

1. A graphical method of determining the average inclination of a land surface from a contour map: *Illinois Acad. Sci., Trans.*, vol. 9, pp. 195–199 [1917].
2. A probable buried mountain range of early Permian age east of the present Rocky Mountains in New Mexico and Colorado: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 5, pp. 605–608, September–October, 1921.
3. Moving underground water as a primary cause of the migration and accumulation of oil and gas: *Econ. Geology*, vol. 16, no. 6, pp. 347–371, September–October, 1921.
4. A convenient loose-leaf system for field maps and notes: *Econ. Geology*, vol. 16, no. 7, pp. 479–481, November, 1921.
5. The stratigraphy of eastern New Mexico—a correction: *Am. Jour. Sci.*, 5th ser., vol. 2, pp. 295–298, November, 1921.
6. Shoestring sands of eastern Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 2, pp. 103–113, 6 figs., March–April, 1923.
7. Further notes on the hydraulic theory of oil migration and accumulation: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 3, pp. 213–225, 1 fig., May–June, 1923; *Nat. Petroleum News*, vol. 15, no. 28, pp. 75–76, 1 fig., July 11, 1923.
8. Buried Pennsylvanian channels and sand bars of eastern Kansas (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 159, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 161, March, 1926.
9. Further observations on shoestring oil pools of eastern Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 6, pp. 568–580, 3 figs., June, 1926; *Oil and Gas Jour.*, vol. 25, no. 1, pp. 62, 65, 68, 70, 3 figs., May 27, 1926.
10. Geological notes: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 9, pp. 1008–1010, September, 1927.
11. Generation of oil by geologic distillation during mountain building: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 11, pp. 1139–1149, 1 fig., November, 1927.
12. A theory of petroleum origin: *Oil Eng. and Tech.*, vol. 9, no. 1, pp. 5–8, 1 fig., January, 1928.
13. Geology of Glenn pool of Oklahoma (discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 2, pp. 213–215, February, 1928.

Rich, John Lyon—Continued.

14. Generation of petroleum as an accompaniment of mountain building (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 191-192, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, pp. 144-145, March, 1928.
15. Jointing in limestones as seen from the air: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 8, pp. 861-862, August, 1928.

Richards, Esther E. See Vaughan, 23.

Richards, Gragg.

1. Veins with fibrous quartz and chlorite from the vicinity of Providence, Rhode Island: *Am. Mineralogist*, vol. 10, no. 11, pp. 429-433, November, 1925.

Richards, J. T. See Clark, S. K., 2.

Richards, Ralph Webster.

1. Commercial oil geology east of the Mississippi: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 4, pp. 460-463, July-August, 1921.
2. (and Pardee, J. T.). The Melrose phosphate field, Montana: *U. S. Geol. Survey, Bull.* 780, pp. 1-32, 2 figs. 2 pls., (maps), April 13, 1925.

Richardson, Charles Henry.

1. The Ordovician terranes of central Vermont: *Vermont, State Geologist*, 11th Rept., pp. 45-51, 3 pls. [1919].
2. (and Camp, Samuel H.). The terranes of Northfield, Vermont: *Vermont State Geologist*, 11th Rept., pp. 99-119, 6 pls. (incl. map), [1919].
3. The terranes of Roxbury, Vermont: *Vermont, State Geologist*, 11th Rept., pp. 120-140, 4 pls., 1 fig. [1919].
4. The glass sands of Kentucky: *Kentucky Geol. Survey, Ser. 6, vol. 1*, 149 pp., 23 figs., 1920.
5. (and Cabeen, C. K.). The geology and mineralogy of Braintree, Vermont: *Vermont, State Geologist*, Twelfth Rept., 1919-20, pp. 57-76, 1 pl., 1921.
6. The building stones of Kentucky: *Kentucky Geol. Survey, ser. 6, vol. 11*, 355 pp., 85 figs., 1923.
7. (and Cabeen, Charles K.). The geology and petrography of Randolph, Vermont: *Vermont, State Geologist*, Thirteenth Rept., 1921-1922, pp. 109-142, 1 pl. (map), 1923.
8. The terranes of Bethel, Vermont: *Vermont, State Geologist*, Fourteenth Rept., 1923-1924, pp. 77-103, 10 pls. (incl. map), 1924.
9. The road materials of Kentucky: *Kentucky Geol. Survey, ser. 6, vol. 22*, 209 pp., 48 figs. and pls., 1924.
10. The mineralogy of Kentucky; a description of the physical and chemical properties of minerals native to Kentucky: *Kentucky Geol. Survey, ser. 6, vol. 27*, pp. 1-127, 1925.
11. The geology and petrography of Barnard, Pomfret, and Woodstock, Vermont: *Vermont, State Geologist*, 15th Rept., 1925-26, pp. 127-159, 7 pls. (incl. map), 1927.
12. The molding sands of Kentucky: *Kentucky Geol. Survey, ser. 6, vol. 29*, pp. 1-64, 20 figs., 1927.
13. Cement materials of Kentucky: *Kentucky Geol. Survey, ser. 6, vol. 29*, pp. 65-154, 33 figs., 1 pl., 1927.
14. Irasburg conglomerate [Vermont] (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, p. 146, March, no. 3, p. 232, April, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 212-213, March 30, 1928.

Richardson, George Burr. See also Butler, B. S., 4; Redwood, 1; Roundy, 1.

1. (and DeWolf, F. W.). [Map of the] Oil and gas fields of the State of Illinois. Scale, 1: 500,000. U. S. Geol. Survey, 1921.
2. [Map of the] Oil and gas fields of the State of Louisiana. Scale, 1 inch=12 miles. U. S. Geol. Survey, 1921.
3. [Map of the] Oil and gas fields of Pennsylvania. Scale, 1: 500,000. U. S. Geol. Survey, 1921.
4. (and Heald, K. C.). [Map of the] Oil and gas fields of the State of Wyoming. Scale, 1: 500,000. U. S. Geol. Survey, 1921.
5. Petroleum in 1919-1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 2, pp. 253-333, 6 figs., May 26, 1923.
6. Natural gas in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 2, pp. 353-358, April 26, 1924.
7. Petroleum in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 2, pp. 359-438, 7 figs., 2 pls., July 15, 1924.
8. Natural gas in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 2, pp. 351-358, March 3, 1925.
9. Petroleum in 1923: U. S. Geol. Survey, Mineral Resources of the United States, 1923, pt. 2, pp. 365-420, 6 figs., 2 pls., August 27, 1925.
10. (and Coons, A. B.). Petroleum in 1924: U. S. Bur. Mines, Mineral Resources of the United States, 1924, pt. 2, pp. 385-458, 4 figs., October 2, 1926.
11. The Upper Cretaceous section in the Colob Plateau, southwest Utah: Washington Acad. Sci., Jour., vol. 17, no. 18, pp. 464-475, 1 fig., November 4, 1927.
12. Structure of the Pittsburgh Basin (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 188, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 143, March, 1928.
13. Structure-contour maps of the Pittsburgh-Huntington basin: Geol. Soc. America, Bull., vol. 39, no. 2, pp. 543-553, 2 figs., 2 pls., June, 1928.

Richardson, H. T. See Kentucky G. S., 42.

Richardson, W. D.

1. The singing sands of Lake Michigan: Science, new ser., vol. 50, pp. 493-495, November 28, 1919.

Richarz, Stephen.

1. Eine tertiäre Vergletscherung Alaskas und die Polwanderung: Deutsche geol. Gesell., Zeitschr., Bd. 74, Monatsber., no. 5-7, pp. 180-190, 1922.
2. Some inclusions in basalt: Jour. Geology, vol. 32, no. 8, pp. 685-689, November-December, 1924.
3. Alfred Wegener's theory of origin of the continents: Pan-Am. Geologist, vol. 43, no. 2, pp. 85-96, March, 1925.
4. Climates of the geologic past: Pan-Am. Geologist, vol. 45, no. 2, pp. 97-108, March, 1926.
5. Quartz keratophyre from the Porcupine gold area, Ontario: Am. Jour. Sci., 5th ser., vol. 11, pp. 441-442, May, 1926.
6. Biotic basis of stratigraphy: Pan-Am. Geologist, vol. 46, no. 2, pp. 101-110, September, 1926.
7. The amphibole grünerite of the Lake Superior region: Am. Jour. Sci., 5th ser., vol. 14, pp. 150-154, August, 1927.
8. The relation of French and American grünerites to similar ferromanganese amphiboles of Sweden: Am. Mineralogist, vol. 12, no. 9, pp. 351-353, 1 fig., September, 1927.

Richarz, Stephen—Continued.

9. Grünerite rocks of the Lake Superior region and their origin: *Jour. Geology*, vol. 35, no. 8, pp. 690-707, November-December, 1927.
10. Problems of the Equator: *Pan-Am. Geologist*, vol. 49, no. 1, pp. 21-34, 2 figs., February, 1928.
11. Metamorphism of the Lake Superior iron formations (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 164-165, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, pp. 74-75, February, 1928.
12. Carl Diener and modern paleontology: *Pan-Am. Geologist*, vol. 50, no. 1, pp. 1-4, 1 pl. (portr.), August, 1928.

Rickaby, H. C.

1. Geology of Ontario-Manitoba boundary: from Bloodvein River to Twelfth base line, 1922: *Ontario Dept. Mines, 32d Ann. Rept.*, vol. 32, pt. 2, pp. 49-59, 8 figs., map, 1923.
2. The mineral association of the salt deposits at Malagash, Nova Scotia: *Toronto, Univ., Studies, Geol. ser.*, no. 16, pp. 46-52, 1 fig., 1923.

Rickard, Thomas Arthur. See also McKenzie, N., 1.

1. Horace V. Winchell, mining geologist: *Min. and Sci. Press*, vol. 118, pp. 211-219, 9 figs., February 15, 1919.
2. Willet G. Miller, Canadian geologist: *Min. and Sci. Press*, vol. 118, pp. 779-786, June 7, 1919.
3. The Bunker Hill enterprise, V; the geology and mineralogy of the lode [Coeur d'Alene district, Idaho]: *Min. and Sci. Press*, vol. 120, pp. 261-268, 5 figs., February 21, 1920.
4. (Editor). *Rossiter Worthington Raymond; a memorial published by the American Institute of Mining and Metallurgical Engineers.* 95 pp., New York, 1920.
5. Applied geology at Butte [Montana]: *Min. and Sci. Press*, vol. 123, no. 13, pp. 427-431, 4 figs., September 24, 1921.
6. The forecasting of earthquakes: *Eng. and Min. Jour.-Press*, vol. 113, no. 23, p. 992, June 10, 1922.
7. Petroleum geologists meet at Los Angeles: *Eng. and Min. Jour.-Press*, vol. 116, no. 15, pp. 643-644, October 13, 1923.
8. The Chino enterprise, III; geology of Santa Rita [New Mexico]: *Eng. and Min. Jour.-Press*, vol. 116, no. 23, pp. 981-985, 1 fig. (map), December 8, 1923.
9. A great mining adventure [Jerome district, Yavapai County, Arizona]: *Eng. and Min. Jour.-Press*, vol. 117, no. 24, pp. 959-963, 2 figs., June 14, 1924.
10. The Ahumada lead mine and the ore deposits of the Los Lamentos Range, in Mexico: *Eng. and Min. Jour.-Press*, vol. 118, no. 10, pp. 365-374, 9 figs., September 6, 1924.
11. The geologic distribution of gold: *Eng. and Min. Jour.-Press*, vol. 119, no. 12, pp. 486-487, March 21, 1925.
12. James Furman Kemp; in memoriam: *Eng. and Min. Jour.*, vol. 123, no. 1, pp. 32-33, portr., January 1, 1927.

Riddell, C. W. See Clark, W. O., 1.

Riddell, Guy C.

1. (and Foster, E. D.). Geology and ores of the Shadow Mountains [San Bernardino County, California]: *Min. Jour. (Phoenix, Ariz.)*, vol. 11, no. 12, pp. 3-6, 33-34, November 15, 1927.

Ries, Heinrich.

1. The occurrence of high-grade American clays and the possibility of their further development: *Am. Ceramic Soc., Jour.*, vol. 1, no. 7, pp. 446-467, 16 figs., July, 1918.
2. High-grade clays of the United States (abstract): *Geol. Soc. America, Bull.*, vol. 30, pp. 95-96, March 31, 1919.
3. (and Somers, R. E.). The clays and shales of Virginia west of the Blue Ridge: *Virginia Geol. Survey, Bull.* no. 20, 118 pp., 8 figs. (incl. maps), 14 pls. (incl. map), 1920.
4. (and Watson, T. L.). *Elements of engineering geology*. 365 pp., 252 figs., New York, John Wiley & Sons, Inc., 1921.
5. (and Bayley, W. S., and others). High-grade clays of the eastern United States, with notes on some western clays: *U. S. Geol. Survey, Bull.* 708, 314 pp., 38 figs., 30 pls., 1922.
6. The clay deposits of Kentucky: *Kentucky Geol. Survey, Ser. 6, vol. 8*, 241 pp., 62 figs., 1922.
7. Fire clays of the eastern coal field of Kentucky: *Am. Ceramic Soc., Jour.*, vol. 5, no. 7, pp. 397-408, 6 figs., July, 1922.
8. (and Bowen, W. C.). Origin of the zinc ores of Sussex County, New Jersey: *Econ. Geology*, vol. 17, no. 7, pp. 517-571, 2 figs., 5 pls., November, 1922.
9. Zirconium; history and chemistry: *Mineral Foote-Notes*, vol. 3, no. 6, pp. 3-7, November-December, 1919.
10. *Economic geology*. 5th ed., 843 pp., 291 figs., New York, John Wiley & Sons, 1925.
11. (and Watson, Thomas L.). *Engineering geology*. 3d ed., 708 pp., 253 figs., 88 pls., New York, John Wiley & Sons, 1925.
12. Memorial of Thomas L. Watson: *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 116-128, portr., March 30, 1925.
13. Memorial of Thomas L. Watson: *Am. Mineralogist*, vol. 10, no. 3, pp. 54-57, portr., March, 1925.
14. Bibliography of clay deposits: *Am. Ceramic Soc., Bull.*, vol. 4, no. 9, pp. 428-510, September, 1925.
15. *Clays; their occurrence, properties, and uses, with special reference to those of the United States and Canada*. 3d ed., 613 pp., 173 figs., New York, John Wiley & Sons, 1927.
16. *Geology [contributions to engineering and industry]*: *Sci. Monthly*, vol. 24, no. 4, pp. 302-308, April, 1927.
17. A needed line of research [on clay]: *Econ. Geology*, vol. 22, no. 6, pp. 625-628, September-October, 1927.

Riffenburg, H. B.

1. Chemical character of ground waters of the northern Great Plains: *U. S. Geol. Survey, Water-Supply Paper* 560, pp. 31-52, 4 figs., April 21, 1925.

Rigaud, F.

1. Les gisements de pétrole d'Amérique; les États-Unis et le Canada: *La Nature*, ann. 51, no. 2547, pp. 51-54, 2 figs., January 27, 1923.

Ring, A. E.

1. Silver-bearing petrified wood [Creede, Colorado]: *Eng. and Min. Jour.-Press*, vol. 117, no. 22, pp. 891-892, May 31, 1924.

Roark, Louis. See also Bartram, 1.

1. The Hewitt oil field, Carter County, Oklahoma: Indiana Acad. Sci., Proc., 1921, pp. 211-220, 1 pl., 1922.
2. Geology of the Papoose oil field, Okfuskee and Hughes Counties, Oklahoma: Oklahoma Geol. Survey, Bull. no. 36, pp. 7-18, 1 fig. (map), February, 1926.

Roberts, D. C.

1. Methods of identifying subsurface strata for correlative purposes [in California oil fields]: California State Min. Bur., Summary of Operations California Oil Fields, vol. 11, no. 7, pp. 5-26, 3 figs., January, 1926.
2. Fossil markers of Midway-Sunset-Elk Hills region in Kern County, California: California State Min. Bur., Summary of Operations California Oil Fields, vol. 12, no. 10, pp. 5-10, 4 pls., April, 1927; extract, Oil Bull., vol. 14, no. 1, pp. 24-26, 4 pls., January, 1928.

Roberts, E. J. See Putnam, P. C., 3.

Roberts, Hugh M. See also Zapffe, 2.

1. Gold veins of central Idaho: Eng. and Min. Jour.-Press, vol. 118, no. 19, pp. 741-742, November 8, 1924.
2. Discussion of papers on Sudbury ore deposits: Econ. Geology, vol. 20, no. 4, pp. 382-388, June-July, 1925.

Roberts, John.

1. Low-temperature origin of anthracite: Pan-Am. Geologist, vol. 48, no. 1, pp. 39-54, 3 figs., August, 1927.

Roberts, John R.

1. The North Texas oil fields: Eng. and Min. Jour., vol. 109, pp. 964-965, April 24, 1920.

Roberts, Joseph Kent.

1. New *Terebratula* from Eocene terranes of Maryland: Pan-Am. Geologist, vol. 38, no. 1, pp. 19-28, 1 pl., August, 1922.
2. Triassic basins of northern Virginia: Pan-Am. Geologist, vol. 39, no. 3, pp. 185-200, 1 pl., April, 1923.
3. Jurassic (?) intrusives of Piedmont Virginia: Pan-Am. Geologist, vol. 39, no. 4, pp. 289-296, 2 pls., May, 1923.
4. Petrographic analysis of Triassic sandstones: Pan-Am. Geologist, vol. 41, no. 1, pp. 22-30, 1 pl., February, 1924.
5. Reconnaissance geological map of Lyon County, Kentucky, by J. K. Roberts, Stuart Weller, and others: Kentucky Geol. Survey, Ser. 6, 1926. Scale, 1 inch=1 mile.
6. (and Collins, R. Lee). The Tertiary of west Tennessee: Am. Jour. Sci., 5th ser., vol. 12, pp. 235-243, 1 fig. (map), September, 1926.
7. The Tuscaloosa formation in Kentucky: Am. Jour. Sci., 5th ser., vol. 14, pp. 465-472, 1 fig., December, 1927.
8. The geology of the Virginia Triassic: Virginia Geol. Survey, Bull. 29, 205 pp., 19 figs., 23 pls. (incl. maps), 1928.
9. Tertiary stratigraphy of west Tennessee: Geol. Soc. America, Bull., vol. 39, no. 2, pp. 435-446, June, 1928; abstract, Geol. Soc. America, Bull., vol. 39, no. 1, pp. 192-193, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 145, March, no. 3, pp. 231-232, April, 1928.

Roberts, Milnor.

1. The gouging of valleys by glaciers as an aid to prospecting: *Pacific Min. News*, vol. 1, no. 7, pp. 202-204, November, 1922.

Robertson, Glenn D. See Jensen, 1.

Robertson, William Fleet, 1859-1929.

1. Annual report of the minister of mines [of British Columbia] for the year ending 31st December, 1918. . . . 510 pp., pls., maps, Victoria, B. C., 1919.
2. Annual report of the minister of mines [of British Columbia] for the year ending 31st December, 1919. . . . 393 pp., pls., figs., maps. Victoria, B. C., 1920.
3. Annual report of the minister of mines [of British Columbia] for the year ending 31st December, 1920. . . . 377 pp., pls., figs., maps, Victoria, B. C., 1921.
4. Annual report of the minister of mines [of British Columbia] for the year ending 31st December, 1921 . . . 365 pp., figs., pls., maps, Victoria, B. C., 1922.
5. Annual report of the minister of mines [of British Columbia] for the year ending 31st December, 1922. . . . 373 pp., illus., map, Victoria, B. C., 1923.
6. Annual report of the minister of mines [of British Columbia] for the year ending 31st December, 1923. . . . 309 pp., illus., map, Victoria, B. C., 1924.

Robie, E. H.

1. The Meteor Crater project [Arizona]: *Eng. and Min. Jour.*, vol. 125, no. 21, pp. 850-852, 3 figs., May 26, 1928.

Robinson, Arthur Herbert Ashburner. See also Malcolm, 8; Timm, 1.

1. Titanium: Canada, Dept. Mines, Mines Branch, 127 pp., 5 figs., maps, 1922.
2. Current activities in zinc-lead mining in British Columbia: Canada, Mines Branch, Investigations of Mineral Resources and the Mining Industry, 1923, pp. 54-68, 1924.
3. Titaniferous magnetic deposits of Bourget Township, Chicoutimi district, Quebec: Canada, Mines Branch, Investigations of mineral resources and the mining industry, 1924, pp. 42-54, 1 fig., 1926; Quebec, Dept. Colonization . . . , Report on Mining Operations . . . 1925, pp. 46-64, 1 fig., 1926.
4. Notes on zinc and lead in eastern Canada: Canada, Dept. Mines, Mines Branch, Investigations of mineral resources and the mining industry, 1925, pp. 60-68, 1926.

Robinson, Ernest Guy. See also Bauer, C. M., 3.

1. Some notes on the Upper Cretaceous paleogeography of Montana; *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 5, pp. 554-559, 4 figs., September-October, 1924.

Robinson, H. F. See Bryan, 29.

Robinson, Heath M. See also Fohs, 1; Goldman, 4; Hopkins, O. B., 2.

1. (and Mills, R. V. A.). Structure and oil and gas resources of the Osage Reservation, Oklahoma; T. 27 N., R. 11 E.: *U. S. Geol. Survey Bull.* 686, pp. 255-277, 2 pls. (incl. map), 3 figs., 1919.
2. (and Mills, R. V. A.). Structure and oil and gas resources of the Osage Reservation, Oklahoma: T. 27 N., R. 10 E.: *U. S. Geol. Survey, Bull.* 686, pp. 303-327, 3 pls. (incl. map), 2 figs., 1919.

Robinson, Heath M.—Continued.

3. Geologic structure and oil and gas prospects of a part of Jefferson County, Oklahoma: U. S. Geol. Survey, Bull. 726, pp. 277-302, 2 pls. (maps), 1 fig., December 20, 1921.
4. The origin of the structure [of northeast Texas petroleum area]; Econ. Geology, vol. 18, no. 8, pp. 722-731, December, 1923.

Robinson, Henry Hollister, 1873-1925. See also Barrell, 6.

1. Tenth and eleventh biennial reports of the Commissioners of the State Geological and Natural History Survey of Connecticut, 1921-1924: Connecticut, State Geol. and Nat. Hist. Survey, Bull. no. 35, 17 pp., 1924.

Robinson, H. S.

1. Geology of the Pearl Lake area, Porcupine district, Ontario: Econ. Geology, vol. 18, no. 8, pp. 753-771, 5 figs., December, 1923.

Robinson, J. French. See Ashley, 11; Pennsylvania T. G. S., 1.

Robinson, Lewis Cass.

1. Map of the areal and structural geology of Morgan County, Kentucky; areal geology by L. C. Robinson: Kentucky Geol. Survey, Ser. 6, 1925. Scale, 1 inch=1 mile.
2. Geology of Morgan County, Kentucky: Kentucky Geol. Survey, Ser. 6, vol. 26, pp. 229-259, 1927.

Robinson, W. I.

1. Folds resulting from vertically acting forces: Jour. Geology, vol. 31, no. 4, pp. 336-343, 2 figs., May-June, 1923.
2. Some remarks on the care of well samples: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 4, pp. 432-434, July-August, 1923.
3. The ancestry of the Hexacoralla: Am. Jour. Sci., 5th ser., vol. 6, pp. 424-426, November, 1923.
4. (and Eldridge, W. J.). A method for correlating gumbos: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 5, pp. 906-910, August, 1925.

Rockwell, F. G. See Shannon, 1.

Roddy, H. Justin.

1. Problems of calcareous concretions in streams (abstract): Pennsylvania Acad. Sci., Proc., vol. 1, p. 76, 1926.

Rode, Carl.

1. Structures in vicinity of Santa Cruz [California] (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 309-310, May, 1928.

Roeschlaub, H. M.

1. Possibilities of the oil-shale industry: Eng. and Min. Jour., vol. 108, pp. 572-576, 3 figs., October 4, 1919.

Roesler, Max.

1. Some garnet reaction rims in anorthosite: New York State Mus., Bull. nos. 229-230, pp. 39-46, 4 pls., 1921.

Roger, John.

1. A probable origin of petroleum: Science, new ser., vol. 66, p. 152, August 12, 1927.

Rogers, Allen H.

1. Geophysics and the mining engineer: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 135, 7 pp., September, 1928.

Rogers, Austin Flint.

1. Colemanite pseudomorphous after inyoite from Death Valley, California: *Am. Mineralogist*, vol. 4, no. 11, pp. 135-139, 2 figs., 1 pl., November, 1919.
2. An interesting occurrence of manganese minerals near San Jose, California: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 443-449, December, 1919.
3. Organization meeting of the Mineralogical Society of America: *Am. Mineralogist*, vol. 5, no. 1, pp. 10-11, January, 1920.
4. Contact-metamorphic deposit at the Mountain Lake mine near Salt Lake City, Utah (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 162, March 31, 1920.
5. Introduction to the study of minerals and rocks; a combined textbook and pocket manual. Second edition, 527 pp., 578 figs., New York, McGraw-Hill Book Company, 1921.
6. Cristobalite in the spherulitic obsidian from Yellowstone National Park: *Am. Mineralogist*, vol. 6, no. 1, pp. 4-6, January, 1921; Supplementary note on cristobalite, no. 3, p. 60, March, 1921.
7. Tridymite-orthoclase rock, a new metamorphic rock type from Imperial County, California (abstract with discussion by A. C. Lane): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 129, March 31, 1922.
8. Proceedings of the twentieth annual meeting of the Cordilleran section of the Geological Society of America held at Berkeley, California, March 26, 1921: *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 187-190, March 31, 1922.
9. Collophane, a much neglected mineral: *Am. Jour. Sci.*, 5th ser., vol. 3, pp. 269-276, April, 1922.
10. A new occurrence of cristobalite in California: *Jour. Geology*, vol. 30, no. 3, pp. 211-216, 1 fig., April-May, 1922.
11. Delafossite from Kimberly, Nevada: *Am. Mineralogist*, vol. 7, no. 6, pp. 102-103, June, 1922.
12. The optical properties and morphology of bisbeeite [Grand Canyon, Arizona]: *Am. Mineralogist*, vol. 7, no. 9, pp. 153-154, 1 fig., September, 1922.
13. The use of plans and elevations in the study of geometrical crystallography: *Am. Mineralogist*, vol. 8, no. 2, pp. 19-31, 7 figs., February, 1923.
14. Proceedings of the twenty-first annual meeting of the Cordilleran section of the Geological Society of America, held at Stanford University, California, April 29, 1922: *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 117-120, March 30, 1923.
15. The crystallography of hydromagnesite: *Am. Jour. Sci.*, 5th ser., vol. 6, pp. 37-47, 10 figs., July, 1923.
16. Euhedral magnesite crystals from San Jose, California: *Am. Mineralogist*, vol. 8, no. 8, pp. 138-140, 2 figs., August, 1923.
17. The crystallography of searlesite: *Am. Jour. Sci.*, 5th ser. vol. 7, pp. 498-502, 4 figs., June, 1924.
18. Kempite, a new manganese mineral from California: *Am. Jour. Sci.*, 5th ser., vol. 8, pp. 145-150, 3 figs., August, 1924.
19. Mineralogy and petrography of fossil bone: *Geol. Soc. America, Bull.*, vol. 35, no. 3, pp. 535-556, 3 figs., 4 pls., September 30, 1924; abstract, no. 1, p. 108, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 153, March, 1924.

Rogers, Austin Flint—Continued.

20. Clinozoisite from Lower California: *Am. Mineralogist*, vol. 9, no. 11, pp. 221-224, 1 fig., November, 1924.
21. Origin of the dolomitic limestone at Argentine, Kansas (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 170-171, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 160, March, 1925.
22. Kempite, a new manganese mineral from Santa Clara County, California (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 206, March 30, 1925.
23. Crystal symmetry (abstract with discussion by James B. Macelwane): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 207-208, March 30, 1925.
24. Friedel's law of rational symmetric intercepts: *Am. Mineralogist*, vol. 10, no. 8, pp. 181-187, 2 figs., August, 1925.
25. (and Reed, R. D.). Sand-calcite crystals from Monterey County, California: *Am. Mineralogist*, vol. 11, no. 2, pp. 23-28, 2 figs., February, 1926.
26. Geology of Cormorant Island, Salton Sea, Imperial County, California (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, p. 219, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 3, pp. 249-250, April, 1926.
27. A mathematical study of crystal symmetry: *Am. Acad. Arts and Sci., Proc.*, vol. 61, no. 7, pp. 161-203, 48 figs., June, 1926.
28. The addition and subtraction rule in geometrical crystallography: *Am. Mineralogist*, vol. 11, no. 11, pp. 303-315, 6 figs., November, 1926.
29. Nature and origin of the "brown rock" phosphorites of Tennessee (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 122-123, 203, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 71, February, 1927.
30. Natural history of the silica minerals: *Am. Mineralogist*, vol. 13, no. 3, pp. 73-92, 20 figs., March, 1928.
31. Nature and origin of "brown rock" phosphorites of Tennessee (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, pp. 298-299, May, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 279-280, March 30, 1928.
32. A tabulation of the 32 crystal classes: *Am. Mineralogist*, vol. 13, no. 12, pp. 571-577, December, 1928.

Rogers, Gaillard Sherburne, 1889-1919. See also Lucas, A. F., 1; Neal, 1.

1. The Sunset-Midway oil field, California; Part II, Geochemical relations of the oil, gas, and water: *U. S. Geol. Survey, Prof. Paper 117*, 103 pp., 2 pls., 8 figs., 1919. Abstract by J. D. Sears, *Washington Acad. Sci., Jour.*, vol. 10, no. 18, p. 523, November 4, 1920.
2. Petroleum hydrology applied to Mid-Continent field (discussion) [oil field waters of California and Mid-Continent fields]: *Am. Inst. Min. Eng., Bull.* no. 147, pp. 603-606, March, 1919.
3. Intrusive origin of the Gulf coast salt domes: *Econ. Geology*, vol. 14, no. 2, pp. 178-180, March-April, 1919.
4. Origin of the salt domes of the Gulf coast (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 10, pp. 291-292, May 19, 1919.
5. Helium, the new balloon gas: *Nat Geog. Mag.*, vol. 35, no. 5, pp. 441-456, illus., May, 1919.
6. Some oil-field waters of the Gulf coast: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 3, pp. 310-331, 2 figs., 1919.
7. Helium-bearing natural gas: *U. S. Geol. Survey, Prof. Paper 121*, 113 pp., 16 figs., 4 pls. (incl. maps), 1921.

Rogers, Gaillard Sherburne—Continued.

8. (and Lee, Wallace). Geology of the Tullock Creek coal field, Rosebud and Big Horn counties, Montana: U. S. Geol. Survey, Bull. 749. 181 pp., 5 figs., 16 pls., 1923.

Rogers, J. K.

1. Observations on some Cincinnati landslides (abstract): Ohio Acad. Sci., Proc., vol. 8, pt. 4, p. 179, 1928; Ohio Jour. Sci., vol. 28, no. 3, p. 157, May, 1928.

Rogers, R. G.

1. The minor oil fields of Kern County; Sunset Extension field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 9, no. 12, pp. 18-24, 3 pls. (incl. map), June, 1924.
2. Notes on the topography and structure of Alamitos Heights [California]: Oil Bull., vol. 13, no. 7, pp. 715, 717, 719, 3 figs., July, 1927.

Rogers, William Ross.

1. Statistical review of the mining industry of Ontario for 1919: Ontario Dept. Mines, 29th Ann. Rept., 1920, pt. 1, pp. 1-60, 1919.
2. Statistical review of Ontario's mineral industry in 1920: Ontario Dept. Mines, 30th Ann. Rept., vol. 30, pt. 1, pp. 1-54, Toronto, 1922.
3. Statistical review of Ontario's mineral industry in 1922: Ontario Dept. Mines, 32d Ann. Rept., vol. 32, pt. 1, 66 pp., 1925.
4. Statistical review of Ontario's mineral industry in 1923: Ontario, Dept. Mines, 33d Ann. Rept., vol. 33, pt. 1, 63 pp., 1925.
5. (and Young, A. C.). Statistical review of Ontario's mineral industry in 1924: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 1, 60 pp., 1926.
6. District of Patricia, Red Lake, and adjacent areas: Ontario, Dept. Mines, Bull. no. 56, 11 pp., 2 figs., 1 pl. (maps), 1926.
7. (and Young, A. C.). Statistical review of Ontario's mineral industry in 1925: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 1, pp. 1-63, figs., 1927.

Rohlfing, D. P.

1. Iron-ore deposits of southern Utah: Eng. and Min. Jour.-Press, vol. 115, no. 16, pp. 716-719, 7 figs., April 21, 1923.

Romberg, Arnold.

1. A practical long-period seismograph: Science, new ser., vol. 50, pp. 141-142, 1 fig., August 8, 1919.
2. Theory of a nontilt seismograph: Seismol. Soc. America, Bull., vol. 9, no. 4, pp. 135-139, 2 figs., December, 1919.

Romer, Alfred Sherwood.

1. The ilium in dinosaurs and birds: Am. Mus. Nat. Hist., Bull., vol. 48, pp. 141-145, 2 figs., 1923.
2. The pelvic musculature of saurischian dinosaurs: Am. Mus. Nat. Hist., Bull., vol. 48, pp. 605-617, 8 figs., 1923.
3. A radial exostosis in the fossil canid *Daphoenus*: Am. Jour. Sci., 5th ser., vol. 8, pp. 235-240, 1 fig., September, 1924.
4. An ophiacodont reptile from the Permian of Kansas: Jour. Geology, vol. 33, no. 2, pp. 173-182, 3 figs., February-March, 1925.
5. Permian amphibian and reptilian remains described as *Stephanospondylus*: Jour. Geology, vol. 33, no. 4, pp. 447-463, 5 figs., May-June, 1925.

Romer, Alfred Sherwood—Continued.

6. A lower Miocene horse, *Anchitherium agatense* (Osborn): Am. Jour. Sci., 5th ser., vol. 12, pp. 325-335, 4 figs., October, 1926.
7. Vertebrate faunal horizons in the Texas red beds (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 232-233, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 3, p. 239, April, 1927.
8. Notes on the Permo-Carboniferous reptile *Dimetrodon*: Jour. Geology, vol. 35, no. 8, pp. 673-689, 9 figs., November-December, 1927.
9. (and Sutton, A. H.). A new arctoid carnivore from the lower Miocene [Wyoming]: Am. Jour. Sci., 5th ser., vol. 14, pp. 459-464, 2 figs., December, 1927.
10. (and McCormack, J. T.). A large *Palaeocaster* from the lower Miocene: Am. Jour. Sci., 5th ser., vol. 15, pp. 58-60, 1 fig., January, 1928.
11. A skeletal model of the primitive reptile *Seymouria*, and the phylogenetic position of that type: Jour. Geology, vol. 36, no. 3, pp. 248-260, 4 figs., April-May, 1928.
12. The notochord in fossil vertebrates: Am. Jour. Sci., 5th ser., vol. 15, pp. 432-433, May, 1928.
13. Vertebrate faunal horizons in the Texas Permo-Carboniferous red beds: Texas, Univ., Bull., no. 2801, pp. 67-108, 1 fig., 1928.
14. A "fossil" camel recently living in Utah: Science, new ser., vol. 68, pp. 19-20, July 6, 1928.
15. (and Fryxell, F. M.). *Paramiatus gurleyi*, a deep-bodied amiid fish from the Eocene of Wyoming: Am. Jour. Sci., 5th ser., vol. 16, pp. 519-527, 3 figs., December, 1928.

Roos, Alford.

1. Mining lepidolite in New Mexico [near Embudo]: Eng. and Min. Jour.-Press, vol. 121, no. 26, pp. 1037-1042, 3 figs., June 26, 1926.

Root, Towner B.

1. The oil and gas resources of the Ava-Campbell Hill area: Illinois State Geol. Survey, Rept. Investigations no. 16, 27 pp., 4 figs., 3 pls. (incl. maps), 1928.

Ropes, Leverett S.

1. Oil possibilities in Montana: Eng. and Min. Jour., vol. 111, no. 18, pp. 754-755, April 30, 1921.

Rose, Bruce.

1. Northern part of Crowsnest coal field, Alberta: Canada, Geol. Survey, Summ. Rept., 1918, pt. C, pp. 13-16, 1919.
2. Highwood coal area, Alberta: Canada, Geol. Survey, Summ. Rept. 1919, pt. C, pp. 14-20, 1 fig., 1920.
3. Structure in the Crowsnest coal area, Alberta: Canadian Inst. Min. and Met., Monthly Bull., no. 150, pp. 609-619, 1 pl., October, 1924; Trans., vol. 27, pp. 484-494, 1 pl. [1925].
4. Murphy, Hoyle, and Matheson townships, Porcupine gold area: Ontario Dept. Mines, 33d Ann. Rept., vol. 33, pt. 3, pp. 50-54, map, 1925.

Ross, A. J. M.

1. Mining methods at the Homestake [Lead, South Dakota]: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1408, 22 pp., 21 figs., February, 1925.

Ross, Charles C.

1. Petroleum and natural gas development in Alberta: Canadian Inst. Min. and Met., Bull., no. 168, pp. 466-495, 10 figs., April, 1926; Trans., vol. 29, pp. 317-346, 10 figs. [1927].

Ross, Clarence Samuel. See also Larsen, 5; Miser, 9, 10, 12, 18, 19, 22.

1. The chloritic material in the ores of southeastern Missouri (abstract): Illinois Acad. Sci., Trans., vol. 9, p. 209 [1917].
2. Structure and oil and gas resources of the Osage Reservation, Oklahoma, Tps. 21 and 22 N., R. 11 E.: U. S. Geol. Survey Bull. 686, pp. 179-191, 3 pls. (incl. maps), 1 fig., 1919.
3. The Lacasa area, Ranger district, north-central Texas: U. S. Geol. Survey, Bull. 726, pp. 303-314, 3 figs., 2 pls., December 23, 1921.
4. A method of distinguishing fused cores [in drillings]: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, pp. 372-374, July-August, 1922.
5. Leverrierite and related minerals: U. S. Geol. Survey, Water-Supply Paper 520, pp. 60-61, 1924.
6. (and Shannon, Earl V.). Mordenite and associated minerals from near Challis, Custer County, Idaho: U. S. Nat. Mus., Proc., vol. 64, art. 19, 19 pp., 3 pls., 1924.
7. A method of preparing thin sections of friable rock: Am. Jour. Sci., 5th ser. vol. 7, pp. 483-485, June, 1924.
8. Evidences of slumping previous to consolidation in the Pennsylvanian of Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 4, pp. 505-510, 2 figs., July-August, 1924.
9. Nephelite-hauynite alnoite from Winnett, Montana: Am. Jour. Sci., 5th ser., vol. 11, pp. 218-227, March, 1926.
10. Beds of volcanic material as key horizons: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 341-343, March-April, 1925.
11. (and Shannon, Earl V.). The origin, occurrence, composition, and physical properties of the mineral iddingsite: U. S. Nat. Mus., Proc., vol. 67, art. 7, 19 pp., 2 pls., May 15, 1925.
12. (and Shannon, E. V.). **Nature of bentonite and related clays** (abstract): Pan-Am. Geologist, vol. 43, no. 5, pp. 364-365, June, 1925.
13. (and Henderson, E. P.). Topaz and associated minerals from the Einstein silver mine, Madison County, Missouri: Am. Mineralogist, vol. 10, no. 12, pp. 441-443, December, 1925.
14. (and Shannon, Earl V.). The so-called genthite from Webster, North Carolina: Am. Mineralogist, vol. 10, no. 12, pp. 444-445, December, 1925.
15. (and Shannon, Earl V.) The minerals of bentonite and related clays and their physical properties: Am. Ceramic Soc., Jour., vol. 9, no. 2, pp. 77-96, 4 figs., February, 1926.
16. (and Shannon, Earl V.). Nickeliferous vermiculite and serpentine from Webster, North Carolina: Am. Mineralogist, vol. 11, no. 4, pp. 90-93, April, 1926.
17. The optical properties and chemical composition of glauconite: U. S. Nat. Mus., Proc., vol. 69, art. 2, 15 pp., 2 figs., May 29, 1926.
18. Methods of preparation of sedimentary materials for study: Econ. Geology, vol. 21, no. 5, pp. 454-468, 1 fig., August, 1926.
19. A Colorado lamprophyr of the verite type: Am. Jour. Sci., 5th ser., vol. 12, pp. 217-229, September, 1926.
20. (and Shannon, Earl V.). The chemical composition and optical properties of beidellite: Washington Acad. Sci., Jour., vol. 15, no. 21, pp. 467-468, December 19, 1925.

Ross, Clarence Samuel—Continued.

21. Altered Paleozoic volcanic materials and their recognition: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 2, pp. 143-164, 8 figs., February, 1928.
22. Sedimentary analcite: *Am. Mineralogist*, vol. 13, no. 5, pp. 195-197, May, 1928.
23. Preparation of sedimentary materials for study (discussion): *Econ. Geology*, vol. 23, no. 3, p. 334, May, 1928.
24. Report on the studies of clays (abstract): *Washington Acad. Sci., Jour.*, vol. 18, no. 9, p. 265, May 4, 1928.
25. (and Shannon, Earl V., and Gonyer, Forest A.). The origin of nickel silicates at Webster, North Carolina: *Econ. Geology*, vol. 23, no. 5, pp. 528-552, 6 figs., August, 1928.
26. Physico-chemical factors controlling magmatic differentiation and vein formation: *Econ. Geology*, vol. 23, no. 8, pp. 864-886, December, 1928.
27. The mineralogy of clays: First International Congress of Soil Science, June 13-22, 1927, Washington, D. C., U. S. A., *Proc. and Papers, Commission V*, pp. 555-561, Washington, 1928.

Ross, Clyde Polhemus. See also Schrader, 10; Vaughan, 16.

1. Geology of the lower Gila region, Arizona: U. S. Geol. Survey, Prof. Paper 129, pp. 183-197, 5 pls., March 29, 1922; abstract, *Washington Acad. Sci., Jour.*, vol. 10, no. 2, pp. 51-52, January 19, 1920.
2. The geology of a part of the Ammonoosuc mining district, New Hampshire: *Am. Jour. Sci.*, 5th ser., vol. 5, pp. 267-302, 3 figs. (incl. maps), April, 1923.
3. A new copper district near Salmon, Idaho: *Eng. and Min. Jour.-Press*, vol. 118, no. 6, pp. 205-208, 5 figs., August 9, 1924.
4. Quicksilver in 1923; with supplementary bibliography by Isabel P. Evans: U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 35-46, September 29, 1924.
5. Geology and ore deposits of the Aravaipa and Stanley mining districts, Graham County, Arizona: U. S. Geol. Survey, Bull. 763, 120 pp., 8 figs., 13 pls. (incl. maps), 1925.
6. Ore deposits of the Saddle Mountain and Banner mining districts, Arizona: U. S. Geol. Survey, Bull. 771, 72 pp., 6 figs., 17 pls. (incl. maps), 1925.
7. The copper deposits near Salmon, Idaho: U. S. Geol. Survey, Bull. 774, 44 pp., 7 figs., 5 pls. (incl. map), 1925.
8. Tertiary planation in eastern Oregon and central Idaho (abstract): *Pan.-Am. Geologist*, vol. 43, no. 5, p. 367, June, 1925.
9. Quicksilver in 1924: U. S. Geol. Survey, Mineral Resources U. S., 1924, pt. 1, pp. 13-19, July 30, 1925.
10. A disseminated lead prospect in northern Boise County, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 20, 7 pp., December, 1926. [Mimeographed.]
11. Some features of the Paleozoic stratigraphy of Idaho (abstract): *Washington Acad. Sci., Jour.*, vol. 17, no. 5, p. 125, March 4, 1927.
12. The Vienna district, Blaine County, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 21, 17 pp., 3 pls. (incl. map), April, 1927.
13. Ore deposits in Tertiary lava in the Salmon River Mountains, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 25, 21 pp., 1 pl. (map), August, 1927. [Mimeographed.]

Ross, Clyde Polhemus—Continued.

14. Deposits of Saddle Mountain and Banner districts [Arizona]: Min. Jour., Phoenix, Ariz., vol. 10, no. 24, pp. 3-5, 12-13, 1 fig., May 15; vol. 11, no. 1, pp. 6-7, 20, May 30; no. 3, pp. 5-6, June 30; no. 6, pp. 7, 54-56, August 15; no. 8, p. 6, September 15; no. 9, p. 8, September 30, 1927.
15. Salient features of geology of south-central Idaho (abstract): Washington Acad. Sci., Jour., vol. 18, no. 9, pp. 267-268, May 4, 1928.
16. Mesozoic and Tertiary granite rocks in Idaho: Jour. Geology, vol. 36, no. 8, pp. 673-693, 1 fig. (map), November-December, 1928.

Ross, J. S.

1. (and Swedenborg, E. A.) Analyses of waters of the Salt Creek field applied to underground problems: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 157, 17 pp., 3 figs., December, 1928; abstract, Mining and Metallurgy, vol. 9, no. 264, p. 556, December, 1928.

Ross, James G.

1. Occurrences of chrome iron ore: Canadian Min. Inst., Bull., no. 92, pp. 1204-1207, December, 1919; Trans., vol. 22, pp. 130-134 [1920].

Roth, Robert. See also Pinkley, 1.

1. The Robberson field, Garvin County, Oklahoma: Oklahoma Geol. Survey, Bull. no. 40-K, pp. 32-52, 4 figs., May, 1927.
2. Correlation of a well core with outcrop sandstone [Carter County, Oklahoma]: Econ. Geology, vol. 23, no. 1, pp. 45-54, 2 figs. (incl. map), January, 1928.
3. *Monoceratina*, a new genus of Ostracoda from the Pennsylvanian of Oklahoma: Jour. Paleontology, vol. 2, no. 1, pp. 15-19, 1 fig., March, 1928.

Rothpletz, August.

1. Ueber die systematische Deutung und die stratigraphische Stellung der ältesten Versteinerungen Europas und Nordamerikas mit besonderer Berücksichtigung der Crytozoen and Oolithe; I. Teil, Die Fauna der Beltformation bei Helena in Montana: Kön. Bayerische Akad. Wiss., mat-phys. Kl., Abh., Bd. 28, 1. Abh., 46 pp., 3 pls., 1915.
2. Ueber die systematische und die stratigraphische Stellung der ältesten Versteinerungen Europas and Nordamerikas mit besonderer Berücksichtigung der Cryptozoen und Oolithe; II. Teil, Ueber *Cryptozoon*, *Eozoon*, und *Atikokania*: Kön. Bayerische Akad. Wiss., mat-phys. Kl., Abh., Bd. 28, 4, Abh., 92 pp., 8 pls., 8 figs., 1916.

Rothrock, Edgar Paul. See also Ward, 13.

1. Sand and gravel deposits in eastern South Dakota: South Dakota Geol. and Nat. Hist. Survey, Circular 15 (South Dakota, Univ., Bull., ser. 24, no. 4), 31 pp. 5 figs. (incl. map), February, 1924.
2. On the force of crystallization of calcite: Jour. Geology, vol. 33, no. 1, pp. 80-83, January-February, 1925.
3. Sand and gravel deposits of Yankton County [South Dakota]: South Dakota Geol. and Nat. Hist. Survey, Circular 21, 57 pp., 2 figs., map, May, 1925.
4. Geology of Cimarron County, Oklahoma: Oklahoma Geol. Survey, Bull. no. 34, pp. 7-92, 18 figs., 3 pls. (incl. map), October, 1925; abstract, Chicago Univ., Abstracts of Theses, Sci. Ser., vol. 1, pp. 305-309, October, 1925.

Rothrock, Edgar Paul—Continued.

5. Sand and gravel deposits of Minnehaha; geology: South Dakota Geol. and Nat. Hist. Survey, Circular 26, pp. 7-35, 6 figs. (incl. map), May, 1926.
6. Records of some deep wells in South Dakota: South Dakota Geol. and Nat. Hist. Survey, Pam. 1, 10 pp., 1 pl., December, 1926. [Mimeographed]

Round, Eda M.

1. A *Crossothea* from the Rhode Island Carboniferous: Am. Jour. Sci., 5th ser., vol. 4, pp. 131-135, 3 figs., August, 1922.
2. A modern plant fossil: Torrey Bot. Club, Bull., vol. 49, no. 3, pp. 63-64, 1 fig., March, 1922.
3. *Annularia* with *Paleostachya* fruit: Bot. Gazette, vol. 73, no. 4, pp. 326-328, 1 fig., April, 1922.
4. Correlation of fossil floras of Rhode Island and New Brunswick: Bot. Gazette, vol. 78, no. 1, pp. 116-118, 4 figs., September, 1924.
5. Correlation of coal floras in Henry County, Missouri, and the Narragansett Basin: Bot. Gazette, vol. 83, no. 1, pp. 61-69, 3 figs., March, 1927.

Roundy, Paul Vere. See also Girty, 5; Woodring, 19.

1. (and Heald, K. C., and Richardson, G. B.). Structure and oil and gas resources of the Osage Reservation, Oklahoma; Tps. 26 and 27 N., R. 12 E.: U. S. Geol. Survey, Bull. 686, pp. 395-420, 1 fig., 6 pls. (incl. maps), 1922.
2. Bibliography of conodont and Paleozoic annelid jaw literature: Nat. Research Council, Division of Geology and Geography, 4 pp., Washington, D. C., March 16, 1925 [mimeographed].
3. Mississippian formations of San Saba County, Texas; Introduction; The micro-fauna: U. S. Geol. Survey, Prof. Paper 146, pp. 1-2, 5-23, 4 pls., 1926.
4. Description of ostracodes: Jour. Paleontology, vol. 1, no. 1, pp. 11-12, July, 1927.

Rowe, E. P.

1. Oil and gas possibilities in Ontario: Intercolonial Gas Jour. of Canada, vol. 18, no. 2, pp. 66-68, February, 1925.

Rowe, Jesse Perry.

1. Possibility of oil and gas in Montana: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 3, pp. 313-315, 1920.
2. Oil and gas in Montana: Eng. and Min. Jour., vol. 110, no. 9, pp. 412-417, 1 fig., August 28, 1920.
3. Petroleum and natural gas in Montana: Eng. and Min. Jour.-Press, vol. 121, no. 14, pp. 563-568, 3 figs., April 3, 1926.
4. Montana's coal exceeds that of any other State: Coal Age, vol. 30, no. 13, pp. 429-431, 3 figs., September 23, 1926.
5. Minor metals and nonmetallic minerals of Montana: Eng. and Min. Jour., vol. 125, no. 20, pp. 816-818, May 19, 1928.

Rowe, R. C.

1. The Buckingham district, Province of Quebec: Eng. and Min. Jour., vol. 124, no. 23, pp. 893-895, 4 figs., December 3, 1927.

Rowley, A. B.

1. Recent study of geological conditions in northwestern South Dakota: Oil Weekly, vol. 26, no. 11, pp. 10-11, 1 fig., September 9, 1922.

Rowley, R. R. See Keyes, 42.

Royce, Stephen.

1. Certain advances in geological information relative to the Lake Superior iron deposits: Lake Superior Min. Inst., Proc. 24th Ann. Meeting, vol. 24, pp. 149-181, 1925.

Rubey, William W. See also Foley, 1; Heald, 8; U. S. Geol. Survey, 12.

1. Wildcat exploration in south central Arkansas: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, pp. 350-358, 1 fig., July-August, 1922.
2. Progress report on a subsurface study of the Pershing oil and gas field, Osage County, Oklahoma: U. S. Geol. Survey, Bull. 751, pp. 23-70, 9 figs., 3 pls. (incl. map), July 18, 1923.
3. (and Bass, N. W.). The geology of Russell County, Kansas, with special reference to oil and gas resources: Kansas State Geol. Survey, Bull. 10, pp. 1-86, 11 figs., 7 pls. (incl. maps), 1925.
4. Determination and use of thicknesses of incompetent beds in oil field mapping and general structural studies: Econ. Geology, vol. 21, no. 4, pp. 333-351, 4 figs., June-July, 1926.
5. Oil possibilities of the Black Hills region: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 11, p. 1177, November, 1926.
6. Stream piracy in northeastern Wyoming (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, p. 120, March 4, 1927.
7. The origin of the Mowry shale (abstract): Washington Acad. Sci., Jour., vol. 17, no. 9, p. 235, May 4, 1927.
8. The effect of gravitational compaction on the structure of sedimentary rocks; a discussion: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 6, pp. 621-632, 1 fig., June, 1927; no. 12, pp. 1333-1336, December, 1927.
9. Gullies in the Great Plains formed by sinking of the ground: Am. Jour. Sci., 5th ser., vol. 15, pp. 417-422, May, 1928.
10. Possible varves in marine Cretaceous shale in Wyoming (abstract): Washington Acad. Sci., Jour., vol. 18, no. 9, pp. 260-262, May 4, 1928.

Ruby, Glen M. See also Hintze, 1.

1. Reflected buried hills and petroleum geology: Econ. Geology, vol. 18, no. 1, pp. 93-96, January-February, 1923.
2. Peculiar phases of oil saturation in certain sandstones: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 5, pp. 473-481, 2 figs., September-October, 1923.

Rude, G. T.

1. Shore changes at Cape Hatteras: Assoc. Am. Geographers, Annals, vol. 12, pp. 87-95, 2 figs. [1923?].

Ruedemann, Paul.

1. (and Gardescu, Ionel). Estimation of reserves of natural gas wells by relationship of production to closed pressure: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 5, pp. 444-463, 6 figs., September-October, 1922.
2. (and Redmon, H. E.). The Turkey Mountain lime pools, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 9, pp. 933-944, 8 figs., September, 1927.

Ruedemann, Rudolf. See also Clarke, J. M., 15; Perkins, E. H., 2; Schuchert, 28; Ulrich, 4.

1. On some fundamentals of pre-Cambrian paleogeography: Nat. Acad. Sci., Proc., vol. 5, no. 1, pp. 1-6, 1 fig., January 15, 1919.
2. A recurrent Pittsford (Salina) fauna: New York State Mus. Bull., nos. 219, 220, pp. 205-222, 3 pls., 1920.
3. Paleontologic contributions from the New York State Museum: New York State Mus. Bull., nos. 227, 228, pp. 63-130, 61 figs., 1921.
4. Observations on the mode of life of primitive cephalopods: Geol. Soc. America, Bull., vol. 32, no. 3, pp. 315-320, 9 figs., September 1, 1921.
5. Report on fossils from the so-called Trenton and Utica beds of Grand Isle, Vermont: Vermont, State Geologist, Twelfth Rept., 1919-20, pp. 90-100, 1 pl., 1921.
6. Additional studies in arrested evolution: Nat. Acad. Sci., Proc., vol. 8, no. 3, pp. 54-55, March, 1922.
7. New forms of life from the Silurian: Nat. Acad. Sci., Proc., vol. 8, no. 3, pp. 55-56, March, 1922.
8. On the occurrence of an *Apus* in the Permian of Oklahoma: Jour. Geology, vol. 30, no. 4, pp. 311-318, 5 figs., May-June, 1922.
9. Further notes on the paleontology of arrested evolution: Am. Naturalist, vol. 56, no. 644, pp. 256-272, May-June, 1922.
10. Positions of the ancient continents: Pan-Am. Geologist, vol. 38, no. 5, pp. 367-377, December, 1922.
11. The existence and configuration of pre-Cambrian continents: New York State Mus. Bull., nos. 239-240, pp. 65-152, 9 figs., 1922.
12. Fundamental lines of North American geologic structure: Am. Jour. Sci., 5th ser., vol. 6, pp. 1-10, 4 figs., July, 1923; New York State Mus. Bull., no. 260, pp. 71-80, 4 figs., 1925.
13. An ancestral acorn barnacle: New York State Mus. Bull., no. 251, pp. 93-104, 1 fig., 2 pls., 1924.
14. Recent publications on the origin and habitat of the Eurypterida: Am. Jour. Sci., 5th ser., vol. 7, pp. 227-232, March, 1924.
15. (and Ehlers, G. M.). Occurrence of the Collingwood formation in Michigan: Michigan Univ., Mus. Geology, Contr., vol. 2, no. 2, pp. 13-18, July 10, 1924; abstract, Geol. Soc. America, Bull., vol. 35, no. 1, p. 186, March 30, 1924.
16. The Utica and Lorraine formations of New York; Part 1, Stratigraphy: New York State Mus. Bull., no. 258, 175 pp., 10 figs., 7 pls. (incl. maps), 1925.
17. The Utica and Lorraine formations of New York; Part 2, Systematic paleontology; No. 1, Plants, sponges, corals, graptolites, crinoids, worms, bryozoans, brachiopods: New York State Mus. Bull., no. 262, 171 pp., 75 figs., 13 pls., June, 1925.
18. The Utica and Lorraine formations of New York; Part 2, Systematic paleontology; No. 2, Mollusks, crustaceans, and eurypterids: New York State Mus. Bull., no. 272, 227 pp., 26 figs., 28 pls., August, 1926.
19. Some Silurian (Ontarian) faunas of New York: New York State Mus. Bull., no. 265, 134 pp., 40 figs., 24 pls., 1925.
20. Siluric faunal facies in juxtaposition: Pan-Am. Geologist, vol. 44, no. 4, pp. 309-312, 1 fig., November, 1925.
21. [Report on] paleontology and paleobotany: New York State Mus. Bull., no. 267, pp. 32-33, 1926.

Ruedemann, Rudolf—Continued.

22. Faunal facies differences of the Utica and Lorraine shales: New York State Mus. Bull., no. 267, pp. 61–77, 5 figs., 1926.
23. A Devonian starfish from Gaspé: New York State Mus. Bull., no. 267, p. 79, 1 pl., 1926.
24. Neuere amerikanische Theorien über die Entstehung der Kontinente und Ozeane: Geol. Rundschau, Bd. 17a (Festschrift, Gustav Steinmann), pp. 49–61, 7 figs., 1926.
25. Hunting fossil marine faunas in New York State: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 26, no. 5, pp. 505–514, 7 figs., September–October, 1926.
26. Fossil evidence of the existence of a Pacific ocean in early Ordovician time (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 299–300, March 30, 1928.
27. Geology of the Capitol district [Albany, New York] (abstract): Science, new ser., vol. 68, p. 649, December 28, 1928.

RuKeyser, Walter A.

1. Asbestos mining and milling in Quebec: Eng. and Min. Jour.-Press, vol. 113, no. 15, pp. 617–625, 11 figs., April 25, 1922.

Runner, Joseph James.

1. The origin of coal: Pahasapa Quart., vol. 8, no. 2, pp. 74–83, February, 1919.
2. Some problems of Black Hills pre-Cambrian geology: Pahasapa Quart., vol. 10, no. 1, pp. 17–26, December, 1920.
3. Evidences of an unconformity within the pre-Cambrian of the Black Hills of South Dakota (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 37–38, March 31, 1921.
4. Origin and history of Lake Chelan (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 87–88, March 31, 1921.
5. Notes on the gold-quartz veins of the Atlantic City-South Pass district, Wyoming: Wyoming, Geologist's Office, Bull. no. 20, pp. 18–23, July 15, 1926.
6. The pre-Cambrian geology of the Nemo district, Black Hills, South Dakota, with special reference to a pre-Cambrian unconformity (abstract): Chicago, Univ., Abstracts of Theses, Sci. Ser., vol. 2, pp. 229–234, September, 1926.
7. Intrusion mechanics of the Harney Peak batholithic granite (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 186, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 142, March, 1928.
8. Older pre-Cambrian of the Medicine Bow Mountains [Wyoming] (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 202, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 154, March, 1928.
9. (and Thomas, L. C.). Stratigraphic relations of the Cherry Creek group in the Madison Valley, Montana (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 202–203, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, pp. 154–155, March, 1928.

Russell, J. W.

1. Evidences of quite recent extinction of American mastodon (abstract): Pan-Am. Geologist, vol. 42, no. 1, pp. 74–75, August; no. 3, p. 235, October, 1924; British Assoc. Adv. Sci., Rept. 92d Meeting, p. 385, 1925.

Russell, Jeanne.

1. Glaciation in the Bitterroot Mountains of Montana (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 218, March 30, 1926.

Russell, Loris S. See also Rutherford, 7.

1. Mollusca of the Paskapoo formation in Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, sec. 4, pp. 207-220, 3 pls., 1926.
2. A new species of the genus *Catopsalis* Cope from the Paskapoo formation of Alberta: Am. Jour. Sci., 5th ser., vol. 12, pp. 230-234, 1 fig., September, 1926.
3. A new fossil fish from the Paskapoo beds of Alberta: Am. Jour. Sci., 5th ser., vol. 15, pp. 103-107, 4 figs., February, 1928.
4. The genera *Kindleia* and *Stylomyledon*: Am. Jour. Sci., 5th ser., vol. 15, p. 264, March, 1928.

Russell, Philip G. See also Browning, 1.

1. The coals of Sexton Creek . . . [Clay County, Kentucky]: Kentucky Geol. Survey, Fourth series, vol. 4, pt. 3, pp. 185-260, 1918.

Russell, Richard Joel.

1. Preliminary statement on the geology of the Warner Range in northeastern California (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 222, March 30, 1926.
2. Recent horizontal offsets along the Haywards fault: Jour. Geology, vol. 34, no. 6, pp. 507-511, 2 figs., August-September, 1926; abstract, Geol. Soc. America, Bull., vol. 37, no. 1, pp. 211-212, March 30, 1926.
3. Surprise Valley fault [California] (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 167-168, March 30, 1927.
4. Landslide lakes of the northwestern Great Basin: California, Univ., Pub. in Geography, vol. 2, no. 7, pp. 231-254, 4 figs., May 12, 1927.
5. The land forms of Surprise Valley, northwestern Great Basin: California, Univ., Pub. in Geography, vol. 2, no. 11, pp. 323-358, 12 figs., October 22, 1927.
6. Basin Range structure and stratigraphy of the Warner Range, northeastern California: California, Univ., Dept. Geol. Sci., Bull., vol. 17, no. 11, pp. 387-496, 32 figs., map, November 8, 1928.

Russell, William L.

1. The structural and stratigraphic relations of the great Triassic fault of southern Connecticut: Am. Jour. Sci., 5th ser., vol. 4, pp. 483-497, 6 figs., December, 1922.
2. The camptonite dikes in the Connecticut Triassic: Am. Jour. Sci., 5th ser., vol. 5, pp. 409-416, 3 figs., May, 1923.
3. Some experiments on capillarity and oil migration: Econ. Geology, vol. 19, no. 1, pp. 35-61, January-February, 1924.
4. The possibilities of oil in western Ziebach County: South Dakota Geol. and Nat. Hist. Survey, Circular 20, 25 pp., 4 figs., 1 pl., February, 1925.
5. Relation between isocarbs and oil and gas production in Kentucky: Econ. Geology, vol. 20, no. 3, pp. 249-260, 2 figs., May, 1925.
6. Well log in northern Ziebach County: South Dakota Geol. and Nat. Hist. Survey, Circular 18, pp. 3-7, September, 1925.
7. The possibilities of oil in western Corson County: South Dakota Geol. and Nat. Hist. Survey, Circular 27, 18 pp., 5 figs., March, 1926.
8. Structures in western Haakon and eastern Pennington counties: South Dakota Geol. and Nat. Hist. Survey, Circular 28, 24 pp., 5 figs., April, 1926.

Russell, William L.—Continued.

9. Oil and gas accumulation in the Clinton sand of Ohio: *Econ. Geology*, vol. 21, no. 6, pp. 538–559, 2 figs., September, 1926.
10. A quick method for determining porosity: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 10, pp. 931–938, 1 fig., October, 1926.
11. Porosity and crushing strength as indices of regional alteration: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 10, pp. 939–952, 1 fig., October, 1926.
12. The proofs of the carbon-ratio theory: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 9, pp. 977–989, September, 1927.
13. The origin of the sandstone dikes of the Black Hills region: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 402–408, 3 figs., November, 1927.
14. A fossil desert in western South Dakota: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 146–150, February, 1928.
15. The origin of artesian pressure: *Econ. Geology*, vol. 23, no. 2, pp. 132–157, 2 figs., March–April, 1928.

Rutherford, Ralph L. See also Allan, 9, 20, 24; Warren, 8.

1. Corrosion by saline waters: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 18, sec. 4, pp. 31–37, 1 pl., 1924.
2. A convenient method for checking the index of a liquid: *Am. Mineralogist*, vol. 9, no. 10, pp. 207–208, October, 1924.
3. Some coal-seam correlation problems in Alberta: *Canadian Inst. Min. and Met., Monthly Bull.*, no. 152, pp. 942–951, 3 figs., December, 1924; *Trans.*, vol. 27, pp. 550–559, 3 figs. [1925].
4. Geology of the foothills belt between McLeod and Athabasca rivers, Alberta: Alberta, Scientific and Industrial Research Council, Rept. no. 11, 82 pp., 8 pls., map, 1925.
5. Geology of the area between Athabasca and Embarras rivers, Alberta: Alberta, Scientific and Industrial Research Council, Geol. Survey Div., Rept. no. 15, 29 pp., 3 pls., map, 1926.
6. Geology along the Bow River between Cochrane and Kananaskis, Alberta: Alberta, Scientific and Industrial Research Council, Geol. Survey Div., Rept. no. 17, 46, v pp., 7 pls., map, 1927.
7. (and Russell, Loris S.). Mammal tracks from the Paskapoo beds of Alberta: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 262–264, 1 fig., March, 1928.
8. Geology of the area between North Saskatchewan and McLeod Rivers, Albert: Alberta, Sci. and Ind. Research Council, Rept. no. 19, 41 pp., 2 pls. (incl. map), 1928.
9. Two interesting boulders in the glacial deposits of Alberta: *Jour. Geology*, vol. 36, no. 6, pp. 558–563, August–September, 1928.
10. Anthraxolite from the Northwest Territories of Canada: *Am. Mineralogist*, vol. 13, no. 10, pp. 516–518, October, 1928.

Rutledge, John Joseph.

1. Peace River oil [Alberta]: *Canadian Min. Jour.*, vol., 40, pp. 401–402, June 4, 1919.

Rutten, L.

1. Cuba, de Antillen en de zuidelijke Molukken: *K. Akad. Wetens, Amsterdam, Versl. Afd. Natuurk*, D. 31, pp. 213–225, 1 pl., 1923; Cuba, the Antilles, and the southern Moluccas: *K. Akad. Wetens, Amsterdam, Proc. Sec. Sciences*, vol. 25, pp. 263–274, 1 pl., March, 1923.

Rybár, Stephen.

1. The Eötvös torsion balance and its application to the finding of mineral deposits: *Econ. Geology*, vol. 18, no. 7, pp. 639-662, 15 figs., October-November, 1923.

St. Clair, Stuart. See also Glenn, 1.

1. Irvine oil district, Kentucky: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 65, pp. 165-175, 1 fig., 1921; *Bull. no. 151*, pp. 1079-1089, 1 fig., July, 1919; Kentucky, Dept. Geology and Forestry, ser. 5 [of Ky. Geol. Survey], *Mineral and Forest Resources of Kentucky*, vol. 1, no. 2, pp. 58-76, 9 figs., July 1, 1919.
2. Clay deposits near Mountain Glen, Union County, Illinois: *Illinois State Geol. Survey, Bull.*, no. 36, pp. 71-83, 2 figs., 1920.
3. The oil pools of Warren County, Kentucky: *Kentucky Geol. Survey*, ser. 6, vol. 6, pp. 103-148, 15 figs., 1921.
4. Oil geology of Warren County, Kentucky: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, p. 100, January-February, 1921 (abstract); vol. 6, no. 1, pp. 24-36, January-February, 1922.

St. John, Ruth N.

1. Replacement vs. impregnation in petrified wood: *Econ. Geology*, vol. 22, no. 7, pp. 729-739, 2 figs., November, 1927.

Salazar Salinas, Leopoldo.

1. Informe sobre mapas geológicos de México: *Pan-Pacific Scientific Conference, First, Proc.*, Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 3, pp. 706-711, 1921.
2. (and others). Memoria relativa al terremoto mexicano del 3 de enero de 1920: *Mexico, Inst., Geol., Bol. no. 38*, 107 pp., 66 pls., 1922.
3. (and others). El Cerro de Mercado, Durango: *Mexico, Inst. Geol., Bol. no. 44*, 90 pp., 20 pls., 1923.
4. Algunas observaciones sobre el origen del criadero de fierro de Durango, llamado Cerro de Mercado: *Soc. cient. "Antonio Alzate," Mem. y Rev.*, t. 43, no. 9-12, pp. 621-638, September-December, 1924.
5. Fenómenos geológicos en el valle de México y su influjo sobre la producción de tolvánicas . . . : *Soc. cient. Ant. Alz., Mem.*, t. 46, no. 3-6, pp. 237-277, March-June, 1926.

Salisbury, Rollin D., 1858-1922. See also Chamberlin, T. C., 32; Weller, 1.

1. *Physiography*. 3d ed., revised, 676 pp., 608 figs., New York, Henry Holt and Company, 1919.
2. (and Alden, William C.). *The geography of Chicago and its environs* (revised edition): *Geog. Soc. Chicago, Bull. no. 1*, 63 pp., 29 figs., 2 pls., May, 1920.

Salton, G. H.

1. Mining practice at Sterling Hill mine [Franklin Furnace district], New Jersey Zinc Company: *Canadian Inst. Min. and Met., Monthly Bull.*, no. 137, pp. 567-593, 22 figs., September, 1923.

Sampson, Edward. See also Wilson, R. A., 5.

1. Talc and soapstone in 1920: *U. S. Geol. Survey, Mineral Resources*, 1920, pt. 2, pp. 201-213, 3 figs., January 20, 1922.
2. Asbestos in 1920. *U. S. Geol. Survey, Mineral Resources*, 1920, pt. 2, pp. 309-322, 1 fig., July 7, 1922.
3. Chromite in 1921: *U. S. Geol. Survey, Mineral Resources*, 1921, pt. 1, pp. 15-17, May 15, 1922.

Sampson, Edward—Continued.

4. Talc and soapstone in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 2, pp. 97–103, 2 figs., August 4, 1922.
5. Asbestos in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 2, pp. 135–142, 1 fig., September 19, 1922.
6. Chromite in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 107–112, 1 fig., August 27, 1923.
7. Asbestos in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 2, pp. 31–37, 1 fig., August 29, 1923.
8. The ferruginous chert formations of Notre Dame Bay, Newfoundland: Jour. Geology, vol. 31, no. 7, pp. 571–598, 4 figs., October–November, 1923.
9. Talc and soapstone in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 2, pp. 81–86, October 11, 1923.
10. Note on the determination of anisotropism in metallic minerals: Econ. Geology, vol. 18, no. 8, pp. 775–777, December, 1923.
11. Arizona asbestos deposits: Econ. Geology, vol. 19, no. 4, pp. 386–388, 1 fig., June–July, 1924.
12. (and Meyer, H. M.). Chromite in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 113–117, October 29, 1924.
13. Asbestos in 1923. U. S. Geol. Survey, Mineral Resources, 1923, pt. 2, pp. 339–350, 1 fig., February 9, 1925.
14. Geologic mapping with airplane photographs in Arizona (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 135, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 1, p. 77, February, 1925.
15. Belt sedimentation and correlation (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 111–112, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 66, February, 1927.
16. Geology and silver ore deposits of the Pend Oreille district, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 31, 25 pp. (mimeographed), 5 pls., December, 1928.

Sampson, Ernest H. S.

1. Some tin placer deposits of Mexico: Eng. and Min. Jour. vol. 124, no. 4, pp. 137–139, 4 figs., July 23, 1927.

Sanborn, Ethel I.

1. Notes on Goshen flora (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 318, May, 1928.

Sanborn, James F. See Berkey, 6.

Sánchez Roig, Mario.

1. Una excursión á Viñales [Jurassic fossils]: Revista de Agricultura, Comercio, y Trabajo, año 2, no. 12, pp. 588–591, 9 figs., Habana, December, 1919.
2. La fauna jurásica de Viñales: Cuba, Secretaría de Agr., Bol. Especial, 61 pp., 23 pls., 1920.
3. Escualidos del Mioceno y Plioceno de la Habana: Cuba, Dirección de montes y minas, Boletín de minas, no. 6, pp. 1–16, 12 pls., 1920.
4. Revisión de los equínidos fósiles cubanos: Soc. cubana hist. nat. "Felipe Poey," Mem., vol. 6, nos. 1–2, pp. 6–92, 14 pls., 1924; also separate, 68 pp., 14 pls., Habana, G. López Salas, 1924.
5. La fauna cretácica de la región central de Cuba: Soc. cubana hist. nat. "Felipe Poey," Mem., vol. 7, nos. 1–2, pp. 83–102, 10 pls., 1926.
6. Los equinodermos fosiles de Cuba: Cuba, Dirección de montes y minas, Bol. minas no. 10, pp. 1–143, 43 pls., December, 1926.

Sanderson, J. O. G. See also Allan, 16.

1. Criteria for the determination of sandstones of Upper Cretaceous age in Alberta (abstract): Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 17, sec. 4, pp. 124-125, May, 1923.

Sandhouse, Grace. See Cockerell, 9.

Sandidge, John R.

1. The recurrent brachiopods of the Lower Cretaceous of northern Texas: Am. Jour. Sci., 5th ser., vol. 15, pp. 314-318, 1 fig., April, 1928.

Sands, J. Melville.

1. Burbank field, Osage County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 5, pp. 584-592, 2 figs., September-October, 1924.
2. Burbank field, Osage County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 10, pp. 1045-1054, 5 figs., October, 1927.

Sansom, C. A.

1. The history and geology of the oil fields of Mexico: Inst. Petroleum Technologists, Jour., vol. 10, no. 43, pp. 306-310, June, 1924.

Santillán, Manuel.

1. Informe preliminar de varias zonas mineralizadas de la parte central del Estado de Guerrero: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 15, 27 pp., map, October, 1925.
2. Informe preliminar de varias zonas mineralizadas de la parte norte y noroeste del Estado de Guerrero: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 18, 17 pp., May, 1926.
3. Estudio preliminar de las zonas mineralizadas que se encuentran á uno y otro lado de la carretera en proyecto entre Durango, Durango, y Mazatlán, Sinaloa: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 24, 28 pp., February, 1927.

Sapper, Karl.

1. Alte und neue Bilder des Masaya und Momotombo [volcanoes, Nicaragua]: Zeitschr. Vulkanologie, Bd. 2, H. 4, pp. 226-231, June, 1916.
2. Ueber Hornitos und verwandte Gebilde: Zeitschr. Vulkanologie, Bd. 5, H. 1, pp. 1-39, 9 pls., 5 figs., June, 1919.
3. Los volcanes de la América Central. 116 pp., 5 pls. Halle (Saale), Max Niemeyer, 1925. (Estudios sobre América y España, Extraserie.)
4. El infierno de Masayo; documentos históricos publicados con una introducción: Estudios sobre América y España, Serie geográfica (publicaciones del Instituto americanista de la Universidad de Wuerzburg), no. 2, 65 pp., 3 pls., Halle (Saale), Max Niemeyer, 1925.
5. Die vulkanische Tätigkeit in Mittelamerika im 20. Jahrhundert: Zeitschr. Vulkanologie, Bd. 9, H. 4 and 5, pp. 156-203, 231-270, 17 figs., 12 pls., February and July, 1926.
6. Reise in Mittelamerika 1923-24: Deutsch. Geographentag, Breslau, Verh., Bd. 21, pp. 30-49, 1925 [not seen]; abstract, Geol. Zentralblatt, Bd. 34, no. 5, p. 219, December 1, 1926.
7. Ein Beitrag zur Paläogeographie Mittelamerikas: Gesell. Erdkunde Berlin, Zeitschr., Sonderband zur Hundertjahrfeier, pp. 57-67, 1928.

Sardeson, Frederick William. See also Leverett, 4.

1. Description of the Herman, Barrett, Chokio, and Morris quadrangles, Minnesota: U. S. Geol. Survey, Geol. Atlas, Herman-Morris folio (no. 210), 10 pp., 12 figs., 8 maps, 1919.
2. Employment of geologists: Pan-Am. Geologist, vol. 38, no. 3, pp. 268-271, October, 1922.
3. Glacial drift sheets in Minnesota: Pan-Am. Geologist, vol. 38, no. 5, pp. 383-402, 3 pls., December, 1922.
4. Cone domes of Sunburst oil field: Pan-Am. Geologist, vol. 39, no. 1, pp. 17-22, 2 figs., 1 pl., February, 1923.
5. Portland cement materials in Minnesota: Pan-Am. Geologist, vol. 39, no. 2, pp. 121-124, March, 1923.
6. Geology of the name Minnesota: Pan-Am. Geologist, vol. 39, no. 4, pp. 273-281, 1 pl., May, 1923.
7. Crude aspects of the petroleum genesis problem: Pan-Am. Geologist, vol. 40, no. 1, pp. 19-28, August, 1923.
8. Minnesota eskers and sundry kames: Pan-Am. Geologist, vol. 40, no. 2, pp. 95-101, 1 fig., September, 1923.
9. History of Mille Lacs, Minnesota: Pan-Am. Geologist, vol. 40, no. 3, pp. 181-196, 3 pls., October, 1923.
10. Glacial origin of the Buffalo Plains of Minnesota: Pan-Am. Geologist, vol. 40, no. 5, pp. 339-348, 1 pl. (map), December, 1923.
11. Tetradium and coral evolution: Pan-Am. Geologist, vol. 41, no. 1, pp. 1-16, 1 pl., February, 1924.
12. Type outcrops of Minnesota River valley: Pan-Am. Geologist, vol. 41, no. 2, pp. 107-122, 1 pl. (map), March, 1924.
13. Volcanic ash in Ordovician rocks of Minnesota: Pan-Am. Geologist, vol. 42, no. 1, pp. 45-52, August, 1924.
14. Selective teaching in geology: Pan-Am. Geologist, vol. 42, no. 4, pp. 263-272, November, 1924.
15. Habit of an Ordovician pelecypod: Pan-Am. Geologist, vol. 42, no. 5, pp. 345-356, 1 pl., December, 1924.
16. Ordovician Crinoidea [Minnesota]: Pan-Am. Geologist, vol. 43, no. 1, pp. 55-68, 1 pl., February, 1925.
17. Primitive cephalopods from Minnesota: Pan-Am. Geologist, vol. 43, no. 3, pp. 185-204, 2 pls., April, 1925.
18. Ordovician kelp, sponges, and sea worms in Minnesota: Pan-Am. Geologist, vol. 43, no. 4, pp. 271-286, 1 pl., May, 1925.
19. Geology in open forum: Pan-Am. Geologist, vol. 44, no. 3, pp. 199-206, October, 1925.
20. Shakopee dolomite and its cone-domes: Pan-Am. Geologist, vol. 45, no. 1, pp. 29-48, February, 1926.
21. Peter sandstone and its buttes: Pan-Am. Geologist, vol. 45, no. 3, pp. 211-224, April, 1926.
22. Beloit formation and bentonite: Pan-Am. Geologist, vol. 45, no. 5, pp. 383-392, 1 pl., June, 1926; vol. 46, no. 1, pp. 11-24, 1 fig., August, 1926.
23. Four-stage glacial epoch: Pan-Am. Geologist, vol. 46, no. 3, pp. 175-188, October, 1926.
24. Pioneer repopulation of devastated sea bottoms: Pan-Am. Geologist, vol. 46, no. 4, pp. 273-288, November, 1926.
25. Oldest Pleistocene till: Pan-Am. Geologist, vol. 47, no. 3, pp. 179-196, 3 pls., April, 1927.

Sardeson, Frederick William—Continued.

26. Pathologic ornamentation on *Strophomena incurvata* Shepherd (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 226, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 3, p. 237, April, 1927.
27. Shore line of Galena seas: Pan-Am. Geologist, vol. 47, no. 5, pp. 331-342, June, 1927.
28. Block faulting on the grand prairies?: Pan-Am. Geologist, vol. 48, no. 2, pp. 127-134, September, 1927.
29. Nomenclature of glacial formations: Pan-Am. Geologist, vol. 48, no. 4, 287-298, November, 1927.
30. Ordovician bentonite in the Northwest [southeastern Minnesota]: Pan-Am. Geologist, vol. 48, no. 5, pp. 347-354, December, 1927.
31. Derivation of the Calceocrinidae: Pan-Am. Geologist, vol. 49, no. 1, pp. 35-46, 1 pl., February, 1928.
32. Most primitive of starfishes: Pan-Am. Geologist, vol. 49, no. 1, pp. 58-59, February, 1928.
33. Starfish beginnings and *Protopalaeaster*: Pan-Am. Geologist, vol. 49, no. 2, pp. 99-110, 1 pl., March, 1928.
34. Recent extensions of our glacial tills: Pan-Am. Geologist, vol. 49, no. 4, pp. 263-270, 1 pl., May, 1928.
35. Heliokleptic earth: Pan-Am. Geologist, vol. 50, no. 1, pp. 29-38, August, 1928.
36. Bentonite seams in stratigraphic correlation: Pan-Am. Geologist, vol. 50, no. 2, pp. 107-116, September, 1928.

Sarle, Clifton J.

1. Sketch of the geology of the Dos Cabezas Mountains of southwestern Arizona (abstract): Science, new ser., vol. 55, p. 544, May 19, 1922.

Sauer, Carl Ortwin.

1. The geography of the Ozark Highland of Missouri: Geographic Society of Chicago, Bull., no. 7, 245 pp. 44 figs., 26 pls., January, 1920.
2. The morphology of landscape: California, Univ., Pub. in Geography, vol. 2, no. 2, pp. 19-53, October 12, 1925.
3. (assisted by others). Geography of the Pennyroyal [region, Kentucky]: Kentucky Geol. Survey, Ser. 6, vol. 25, 303 pp., 125 figs. and pls. (incl. maps), 1927.

Saunders, L. W. See also Wilhelm, 3.

1. The minor oil fields of Kern County; Hovey Hills field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 9, no. 12, pp. 11-18, 2 pls. (incl. map), June, 1924.

Savage, Thomas Edmund. See also Tough, 1.

1. The Thebes sandstone and Orchard Creek shale and their faunas in Illinois: Illinois Acad. Sci., Trans., vol. 10, pp. 261-275, 2 pls. [1918].
2. (and Van Tuyl, Francis M.). Geology and stratigraphy of the area of Paleozoic rocks in the vicinity of Hudson and James bays: Geol. Soc. America, Bull., vol. 30, pp. 339-378, 3 pls., 4 figs. (paleogeographic maps), September 30, 1919.
3. The Devonian formations of Illinois: Am. Jour. Sci., 4th ser., vol. 49, pp. 169-182, 3 figs., March, 1920.
4. The Devonian rocks of southwestern Illinois (abstract): Science, new ser., vol. 51, pp. 494-495, May 14, 1920.

Savage, Thomas Edmund—Continued.

5. (and Udden, J. A.). The geology and mineral resources of the Edgington and Milan quadrangles: Illinois, State Geol. Survey, Bull. no. 38, pp. 115–208, 20 figs., map, 1922; Extract, 96 pp., 1921.
6. Geology and mineral resources of the Avon and Canton quadrangles: Illinois, State Geol. Survey, Bull. no. 38, pp. 209–271, 8 figs., map, 1922; Extract, 67 pp., 1921.
7. New species of Devonian fossils from western Illinois: Illinois State Acad. Sci., Trans., vol. 14, pp. 197–206, 4 pls. [1922].
8. (and Nebel, M. L.). Geology and mineral resources of the La Harpe and Good Hope quadrangles: Illinois State Geol. Survey, Bull. no. 43, pp. 9–93, 11 figs., map, 1923 (published as extract in 1921).
9. The paleontologist's view of evolution: Illinois State Acad. Sci., Trans., vol. 16, pp. 39–42, 1923.
10. Oriskany limestone in Illinois (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 106, March 30, 1924.
11. Marine invertebrate fossils as horizon markers in the Pennsylvanian rocks of Illinois: Jour. Geology, vol. 32, no. 7, pp. 575–582, October–November, 1924.
12. Richmond rocks of Iowa and Illinois: Am. Jour. Sci., 5th ser., vol. 8, pp. 411–427, November, 1924.
13. The correlation of the Maquoketa and Richmond rocks of Iowa and Illinois: Illinois State Acad. Sci., Trans., vol. 17, pp. 233–247, 1925.
14. Comparison of the Devonian rocks of Illinois and Missouri: Jour. Geology, vol. 33, no. 5, pp. 550–558, July–August, 1925; abstract, Illinois State Acad. Sci., Trans., vol. 18, p. 408, 1925.
15. Oriskany rocks in Illinois: Am. Jour. Sci., 5th ser., vol. 10, pp. 139–144, 2 figs., August, 1925.
16. Silurian rocks of Illinois: Geol. Soc. America, Bull., vol. 37, no. 4, pp. 513–533, 1 fig., December 30, 1926; abstract, no. 1, pp. 159–160, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 161, March, 1926; Illinois State Acad. Sci., Trans., vol. 19, pp. 286–287, 1926.
17. Significant breaks and overlaps in the Pennsylvanian rocks of Illinois: Am. Jour. Sci., 5th ser., vol. 14, pp. 307–316, October, 1927; abstract, Geol. Soc. America, Bull., vol. 38, no. 1, pp. 135–136, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 78, February, 1927.
18. (and Griffin, Judson R.). Significance of crystalline boulders in Pennsylvanian limestone in Illinois: Geol. Soc. America, Bull., vol. 39, no. 2, pp. 421–428, 2 figs., June, 1928; abstract, no. 1, p. 212, March, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 146, March, no. 3, p. 232, April, 1928.

Sawtelle, George.

1. The Batson oil field, Hardin County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 9, pp. 1277–1282, 2 figs., 1 pl., December, 1925; Geology of salt dome oil fields, pp. 524–529, 1 pl., 1926.

Sawyer, Roger W.

1. Areal geology of a part of southwestern Oklahoma (with discussion by F. C. Greene and others): Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 3, pp. 312–321, 2 figs. (maps), May–June, 1924.

Sayles, Robert Wilcox. See also Twenhofel, 16, 18.

1. Seasonal deposition in aqueoglacial sediments: Harvard Coll., Mus. Comp. Zool., Mem., vol. 47, no. 1, 67 pp., 16 pls., 2 figs., February, 1919.

Sayles, Robert Wilcox—Continued.

2. Report on the geological collections: Harvard Coll., Mus. Comp. Zool., Ann. Rept., 1919-1920, p. 32, 1920.
3. Report on the geological collections: Harvard Coll., Mus. Comp. Zool., Ann. Rept., 1920-1921, p. 29, 1921.
4. Microscopic sections of till and stratified clay: Geol. Soc. America, Bull., vol. 32, no. 1, pp. 59-62, 4 figs., March 31, 1921.
5. Report on the geological collections: Harvard Coll., Mus. Comp. Zoology, Ann. Rept., 1921-1922, p. 21, 1922.
6. Possible tillite at Levis, Quebec (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 90-100, March 31, 1922.
7. Preliminary notes on some regularly banded argillites which suggest seasonal deposition(abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 133, March 31, 1922.
8. The dilemma of the paleoclimatologists: Am. Jour. Sci., 5th ser., vol. 3, pp. 456-473, June, 1922.
9. Report on the geological collections: Harvard College, Mus. Comp. Zoology, Ann. Rept. for 1922-1923, pp. 23-24, 1923.
10. Report on the geological collections: Harvard Coll., Mus. Comp. Zoology, Ann. Rept. for 1923-1924, pp. 22-23, 1924.
11. Variability of summer deposition in glacial varves (abstract, with discussion by C. A. Reeds): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 67-68, March 30, 1924; abstract, Pan-Am. Geologist, vol. 41, no. 2, p. 137, March, 1924.
12. Are some fossil soils in Bermuda recorders of interglacial episodes? (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 68-69, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, pp. 137-138, March, 1924.
13. Report on the geological collections: Harvard Coll., Mus. Comp. Zoology, Ann. Rept. Director, 1924-5, p. 23, 1925.
14. (and Clark, Thomas H.). Pleistocene Bermuda (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, pp. 141-142, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, pp. 145-146, March, 1925.
15. Superficial factors in earthquakes: Science, new ser., vol. 62, pp. 299-301, October 2, 1925; Royal Astronomical Soc. Canada, Jour., vol. 19, no. 6, pp. 179-182, October, 1925.
16. Report on the geological collections: Harvard Coll., Mus. Comp. Zoology, Ann. Rept. Director, 1925-26, p. 23, 1926.
17. George Carroll Curtis: Geog. Rev., vol. 16, no. 2, pp. 332-333, April, 1926.
18. Report on the geological collections: Harvard Coll., Mus. Comp. Zoology, Ann. Rept. Director, 1926-27, p. 22, 1927.
19. Three Pleistocene tills in southern Maine (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 142-143, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 150, March, 1927.
20. Is there any effect of superficial factors in seismic and volcanic activity? (abstract): Seismological Soc. America, Bull., vol. 17, no. 3, pp. 189-191, September, 1927.

Sayre, Robert H.

1. Arsenical ore deposits in the United States: Eng. and Min. Jour.-Press, vol. 118, no. 24, pp. 929-932, 6 figs., December 13, 1924.

Schaffer, Franz Xaver.

1. Major earth features and their transformation: Pan-Am. Geologist, vol. 50, no. 2, pp. 121-130, September, 1928.

Schagen van Soelen, J. C.

1. Angular inclusions and banded and "orbicular" structure in ore veins: Eng. and Min. Jour., vol. 122, no. 20, pp. 777-778, 1 fig., November 13, 1926.

Schairer, J. F.

1. (and Lawson, C. C.). Copiapite from the Santa Maria Mountains, eastern Riverside County, California: Am. Mineralogist, vol. 9, no. 12, pp. 242-244, December, 1924.
2. (and Lawson, C. C.). On pickeringite from Portland, Connecticut: Am. Jour. Sci., 5th ser., vol. 11, pp. 301-304, 1 fig., April, 1926.
3. Lithiophilite and other rare phosphates from Portland, Connecticut: Am. Mineralogist, vol. 11, no. 4, pp. 101-104, April, 1926.

Schaller, Waldemar Theodore. See also Hewett, 14; Larsen, 13, 18.

1. Plancheteite and shattuckite, copper silicates, are not the same mineral: Washington Acad. Sci., Jour., vol. 9, no. 5, pp. 131-134, March 4, 1919.
2. Gems and precious stones in 1918: U. S. Geol. Survey, Mineral Resources, pt. 2, pp. 7-14, July 16, 1919.
3. Mica in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 2, pp. 629-694, May 24, 1920.
4. Thorium, zirconium, and rare-earth minerals in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 1-32, September 1, 1920.
5. Gillespite, a new mineral [Alaska]: Washington Acad. Sci., Jour., vol. 12, no. 1, pp. 7-8, January 4, 1922.
6. Argentobarosite, a new silver mineral [from Dividend, Utah]: Washington Acad. Sci., Jour., vol. 13, no. 11, p. 233, June 4, 1923.
7. The genesis of lithium pegmatites: Am. Jour. Sci., 5th ser., vol. 10, pp. 269-279, 1 fig., September, 1925.
8. Index of refraction of hisingerite—a correction: Am. Jour. Sci., 5th ser., vol. 11, p. 376, April, 1926.
9. (and Henderson, Edward P.). Purple muscovite from New Mexico: Am. Mineralogist, vol. 11, no. 1, pp. 5-16, January, 1926.
10. How pegmatites form (abstract): Am. Mineralogist, vol. 11, no. 2, pp. 41-42, February, 1926.
11. Genesis of lithium pegmatites (abstract): Washington Acad. Sci., Jour., vol. 16, no. 3, p. 76, February 4, 1926.
12. Kernite, a new sodium borate: Am. Mineralogist, vol. 12, no. 1, pp. 24-25, January, 1927.
13. Mineral replacements in pegmatites: Am. Mineralogist, vol. 12, no. 3, pp. 59-63, March, 1927.
14. The mineralogy of the Tintic Standard mine, Utah (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, p. 121, March 4, 1927.
15. The probable identity of camssellite with szabibelyite: Am. Mineralogist, vol. 13, no. 6, pp. 230-232, June, 1928.
16. Hydroboracite from California: Festschrift Victor Goldschmidt, pp. 256-262, 1 fig., Heidelberg, Carl Winters Universitätsbuchhandlung, 1928.

Schander, Johannes.

1. Der Untergrund der Texas-Golfküste and seine Schwereverhältnisse: Zeitschr. prakt. Geologie, Jg. 35, H. 10, pp. 152-157, 5 figs., October, 1927.

Scheffel, Earl R.

1. "Slides" in the Conemaugh formation near Morgantown, West Virginia: Jour. Geology, vol. 28, no. 4, pp. 340-355, 5 figs., May-June, 1920.
2. "Soot" in coal: Science, new ser., vol. 59, pp. 212-213, February 29, 1924.
3. Some problems of the oil and gas industry: West Virginia Acad. Sci., Proc., vol. 1, no. 1 (W. Va. Univ. Bull., ser. no. 27, no. 1), pp. 65-70, August, 1926.
4. A phase of coal conservation: West Virginia Acad. Sci., Proc., vol. 1, no. 1 (W. Va. Univ. Bull., ser. no. 27, no. 1), pp. 71-73, August, 1926.

Schempp, C. A.

1. Argento-jarosite, a new silver mineral [from Utah]: Am. Jour. Sci., 5th ser., vol. 6, pp. 73-75, July, 1923.

Schenck, Hubert Gregory. See also Cushman, 44; Kerr, P. F., 4, 7.

1. Physiography of the Eugene quadrangle, Oregon (abstract with discussion by Warren D. Smith): Geol. Soc. America, Bull., vol. 36, no. 1, p. 203, March 30, 1925.
2. (and Aguerrevere, Santiago E.). Morphologic nomenclature of orbitoidal Foraminifera: Am. Jour. Sci., 5th ser., vol. 11, pp. 251-256, 3 figs., March, 1926.
3. Cassididae of western America: California, Univ., Dept. Geol. Sci., Bull., vol. 16, no. 4, pp. 69-98, 1 fig., 4 pls., May 4, 1926.
4. Should new fossil species be described from wells?: Science, new ser., vol. 64, pp. 65-66, July 16, 1926.
5. Marine Oligocene of Oregon: California, Univ., Dept. Geol. Sci., Bull., vol. 16, no. 12, pp. 449-460, 1 fig., March 19, 1927; abstract, Geol. Soc. America, Bull., vol. 38, no. 1, p. 202, March 30, 1927.
6. Diatomaceous shale interbedded with arkose (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 196, March 30, 1927.
7. Diatoms in western Oregon shales: Econ. Geology, vol. 22, no. 6, pp. 565-568, 2 figs., September-October, 1927.
8. A new echinoid from the California Eocene: San Diego Soc. Nat. Hist., Trans., vol. 5, no. 12, pp. 195-201, 1 pl., April 28, 1928.
9. Pittsburg Bluff fauna of Oregon Oligocene (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 302-303, May, 1928.
10. *Discocyclina* in California (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 316-317, May, 1928.
11. The biostratigraphic aspect of micropaleontology: Jour. Paleontology, vol. 2, no. 2, pp. 158-165, 1 pl., June, 1928.
12. Stratigraphic relations of western Oregon Oligocene formations: California, Univ., Dept. Geol. Sci., Bull., vol. 18, no. 1, pp. 1-50, 18 figs., November 30, 1928.

Scheuble, Hugo. See Müllerried, 1.

Schilling, Karl H. See Wagner, C. M., 1.

Schlossmacher, K.

1. Mikroskopische Untersuchungsbeiträge zur Kenntniss der kanadischen Kobalt-Nickel-Silberformation [Temiskaming, Ontario]: Zeitschr. prakt. Geologie, Jg. 29, H. 9, pp. 131-134, 8 figs., September, 1921.

Schmidt, M. M.

1. The common rocks and gem stones of Kansas and how to recognize them: Kansas Acad. Sci., Trans., vol. 29, pp. 85-88, 1920.

Schmitt, Harrison Ashley.

1. Possible potash production from Minnesota shale: *Econ. Geology*, vol. 19, no. 1, pp. 72-83, 1 fig., January-February, 1924.
2. Geologic notes on the Santa Barbara area in the Parral district of Chihuahua, Mexico: *Eng. and Min. Jour.*, vol. 126, no. 11, pp. 407-411, 4 figs, September 11, 1928.

Schneider, Henry G.

1. Smackover oil field, Ouachita and Union Counties, Arkansas: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 70, pp. 1076-1099, 3 figs., 1924; [preprint] no. 1326, 24 pp., 3 figs., March, 1924.
2. Names of producing sands in the Smackover, Arkansas, field: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 7, pp. 1116-1117, October, 1925.

Schneider, Hyrum.

1. General geology of Utah: *Utah, Univ., Bull.*, vol. 10, no. 11 (Engineering Station, Department of Metallurgical Research, *Bull.*, no. 12), pp. 3-33, December, 1919.
2. A discussion of certain geologic features of the Wasatch Mountains: *Jour. Geology*, vol. 33, no. 1, pp. 28-48, 5 figs., January-February, 1925.
3. A study of glauconite: *Jour. Geology*, vol. 35, no. 4, pp. 289-310, 2 figs., May-June, 1927

Schneiderhöhn, H.

1. Argentite and acanthite: *Am. Mineralogist*, vol. 12, no. 5, pp. 210-211, May, 1927.

Schoch, Eugene Paul. See also Sellards, 25, 26.

1. Chemical analyses of Texas rocks and minerals: *Texas, Univ., Bull.*, no. 1814, 256 pp., March 5, 1918 [1920?].

Schönberg, J. W.

1. Bericht über die jüngsten Ereignisse und Arbeiten am Masaya, Nicaragua: *Zeitschr. Vulkanologie*, Bd. 11, H. 2, pp. 128-134, 4 pls., December, 1927.

Schoewe, Walter Henry.

1. The interpretation of certain leached gravel deposits in Louisa and Washington counties, Iowa: *Iowa Acad. Sci., Proc.*, vol. 26, pp. 393-398 [1920].
2. Southernmost extension of Kansas tills: *Pan-Am. Geologist*, vol. 38, no. 5, pp. 378-382, 1 fig., December, 1922.
3. Origin and history of extinct Lake Calvin (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 93-94, March 30, 1923.
4. The temporary Mississippi River: *Jour. Geology*, vol. 31, no. 5, pp. 420-432, 1 fig. (map), July-August, 1923.
5. Glacial geology of Kansas: *Pan-Am. Geologist*, vol. 40, no. 2, pp. 102-110, 1 pl (map), September, 1923.
6. The origin and hstory of extinct Lake Calvin: *Iowa Geol. Survey*, vol. 29, pp. 49-222, 32 figs., 14 pls. (incl. maps) [1924].
7. Till-like deposits south of Kansas River in Douglas County, Kansas: *Iowa Acad. Sci., Proc.* 1922, vol. 29, pp. 61-65, 1 fig. [1924?].

Schofield, Stuart James. See also Brock, 13.

1. Britannia map area [British Columbia]: *Canada, Geol. Survey, Summ. Rept.*, 1918, pt. B, pp. 56-59, 1919.

Schofield, Stuart James—Continued.

2. Ainsworth mining district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1918, pt. B, pp. 60-62, 1919.
3. The Mesozoic period of mineralization in British Columbia: Canadian Min. Inst., Trans., vol. 21, pp. 422-427, 1 pl. (map) [1919].
4. Geology and ore deposits of Ainsworth mining camp, British Columbia: Canada, Geol. Survey, Mem. 117, 73 pp., 3 pls., 6 figs., 12 maps, 1920.
5. The discovery of fossils in the Mesozoic rocks of Hedley, B. C.: Canada, Geol. Survey, Summ. Rept., 1919, pt. B, pp. 38-39, 1920.
6. The origin of the Purcell Trench, British Columbia (Kootenay Lake valley): Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 13, sec. 4, pp. 23-31, 3 figs. (maps), 1920.
7. (and Hanson, George). Salmon River district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1920, pt. A, pp. 6-12, 1 fig., 1921.
8. The origin of the Rocky Mountain trench, British Columbia: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 14, sec. 4, pp. 61-97, 5 figs., 1921.
9. The ore deposits of British Columbia: Canadian Inst. Min. and Met., Monthly Bull. no. 112, pp. 703-714, August, 1921; Trans., vol. 24, pp. 86-98 [1922].
10. The discovery of *Olenellus* fauna in southeastern British Columbia: Science, new ser., vol. 54, pp. 666-667, December 30, 1921.
11. (and Hanson, G.). Geology and ore deposits of Salmon River district, British Columbia: Canada, Geol. Survey, Mem. 132, 81 pp., 6 figs., 4 pls., map, 1922.
12. Relationship of the pre-Cambrian (Beltian) terrain to the Lower Cambrian strata of southeastern British Columbia: Canada, Geol. Survey, Bull. no. 35 (Geol. ser. no. 42), 15 pp., 2 figs., October 30, 1922.
13. The geological record of the Cordillera in Canada: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 17, sec. 4, pp. 79-103, May, 1923.
14. (and Hanson, George). The Salmon River district, British Columbia: Min. Mag., vol. 28, no. 4, pp. 203-214, 9 figs., April, 1923.
15. Geological record in British Columbia (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 164, March 30, 1924.
16. The fissure systems of British Columbia: Canadian Inst. Min. and Met., Bull., no. 159, pp. 759-764, 1 fig., July, 1925; Trans., vol. 28, pp. 428-433, 1 fig. [1926].
17. The Britannia mines, British Columbia: Econ. Geology, vol. 21, no. 3, pp. 271-284, 3 figs., May, 1926.

Schrader, Frank Charles. See also Stose, 17.

1. Pyrite at the Haile mine, Kershaw, South Carolina, with a note on pyritization at the Brewer mine, near Jefferson: U. S. Geol. Survey, Bull. 725, pp. 331-345, 1 pl., October 21, 1921.
2. Antimony in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 1, pp. 287-311, 2 figs., 2 pls., June 6, 1921.
3. Antimony in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 1, pp. 73-84, 2 figs., 1 pl., October 27, 1921.
4. Antimony in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 121-128, September 18, 1922.
5. The Jarbidge mining district, Nevada, with a note on the Charleston district: U. S. Geol. Survey, Bull. 741, 86 pp., 19 figs., 20 pls. (incl. maps), 1923.

Schrader, Frank Charles—Continued.

6. Antimony in 1922: U. S. Geol. Survey, Mineral Resources, 1922 pt. 1, pp. 97-105, August 7, 1923.
7. Molybdenite in the Rocky Bar district, Idaho: U. S. Geol. Survey, Bull. 750, pp. 87-99, 3 figs., 1 pl., October 25, 1924.
8. Antimony in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 277-293, 2 figs., January 21, 1925.
9. Antimony in 1924: U. S. Bur. Mines, Mineral Resources, 1924, pt. 1, pp. 105-118, 1 fig., March 13, 1926.
10. (and Ross, Clyde P.). Antimony and quicksilver deposits in the Yellow Pine district, Idaho: U. S. Geol. Survey, Bull. 780, pp. 137-164, 4 figs., 2 pls. (incl. map), March 12, 1926.

Schramm, Eck Frank.

1. Notes on the oil shales of southwestern Wyoming: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 2, pp. 195-208, 7 figs., 1920.
2. (and Cook, H. J.). The Agate anticline, Sioux County, Nebraska: Kanoka Petroleum Company, Geol. Dept., Bull. A, 38 pp., 3 figs., 8 pls., Lincoln, Nebraska, July, 1921.

Schroeder, Rolf A.

1. Ball clays of west Tennessee: Tennessee State Geol. Survey, Resources of Tennessee, vol. 2, no. 2, pp. 81-180, 13 figs., April, 1919.
2. Curious erosion feature in west Tennessee clays: Jour. Geology, vol. 27, no. 6, pp. 480-481, 1 fig., September-October, 1919.
3. A contribution to the geology of Essex County, Vermont: Vermont, State Geologist, Twelfth Rept., 1919-20, pp. 37-42, 1 fig., 1921.

Schroyer, Charles Ross. See also Parmelee, 1; Stauffer, 1.

1. Notes on potash possibilities in Illinois: Illinois, State Geol. Survey, Bull. no. 38, pp. 435-440, 1922.

Schuchert, Charles. See also Ashley, 16; Brown, B., 2; Moore, R. C., 17, 20; Nelson, W. A., 10; Pirsson, 5; Raymond, 8; Spieker, 3; Twenhofel, 30; Woodring, 8.

1. The Taconic system resurrected: Am. Jour. Sci., 4th ser., vol. 47, pp. 113-116, February, 1919.
2. The proper name for the fossil hydroid *Beatricea*: Am. Jour. Sci., 4th ser., vol. 47, pp. 293-296, 1 fig., April, 1919.
3. A Lower Cambrian edrioasterid, *Stomatocystites walcotti*: Smithsonian Misc. Coll., vol. 70, no. 1, 8 pp., 1 pl., 1 fig., 1919.
4. The relations of stratigraphy and paleogeography to petroleum geology: Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 286-298, 1919.
5. Joseph Barrell: Science, new ser., vol. 49, pp. 605-607, June 27, 1919.
6. Joseph Barrell: Sci. Monthly, vol. 9, no. 1, pp. 93-96, portr., July, 1919.
7. Joseph Barrell (1869-1919): Am. Jour. Sci., 4th ser., vol. 48, pp. 251-280, portr., October, 1919.
8. Petroliferous provinces (discussion of paper by E. G. Woodruff): Am. Inst. Min. and Met. Eng., Trans., vol. 65, pp. 204-216, 1921; Bull. no. 155, pp. 3058-3070, November, 1919.
9. A paleontologic revival at Yale University: Science, new ser., vol. 51, pp. 80-81, January 23, 1920.
10. American paleontologists and the immediate future of paleontology: Geol. Soc. America, Bull., vol. 31, no. 3, pp. 363-373, September 30, 1920.

Schuchert, Charles—Continued.

11. The boundary between the Silurian and Devonian in Shropshire and France: *Science*, new ser., vol. 52, pp. 339-340, October 8, 1920.
12. Diagenesis in sedimentation (with discussion): *Geol. Soc. America, Bull.*, vol. 31, no. 4, pp. 425-432, November 30, 1920.
13. The nature of Paleozoic crustal instability in eastern North America: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 399-414, 6 figs., December, 1920.
14. The evolution of primitive plants from the geologist's viewpoint: *New Phytologist*, vol. 19, no. 9-10, pp. 272-275, November-December, 1920.
15. Are the Lance and Fort Union formations of Mesozoic time?: *Science*, new ser., vol. 53, pp. 45-47, January 14, 1921.
16. (and Dunbar, C. O.). Stratigraphy and diastrophism of western Newfoundland (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 38-39, March 31, 1921.
17. Evolution of geologic climates: *Am. Jour. Sci.*, 5th ser., vol. 1, no. 4, pp. 320-324, April, 1921.
18. Methods of determining the relationships of marine invertebrate fossil faunas: *Geol. Soc. America, Bull.*, vol. 32, no. 3, pp. 339-348, September 1, 1921.
19. Lance and Union formations are Mesozoic in age: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 65-66, February, 1922.
20. The Andean geosyncline (abstract with discussion by F. P. Shepard, W. M. Davis, K. F. Mather, and T. W. Vaughan): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 90-91, March 31, 1922.
21. Devonian of Oklahoma, with special reference to the Oriskany and Camden formations: *Geol. Soc. America, Bull.*, vol. 33, no. 4, pp. 665-670, November 2, 1922.
22. Sites and nature of the North American geosynclines (presidential address): *Geol. Soc. America, Bull.*, vol. 34, no. 2, pp. 151-229, 17 figs. (paleogeographic maps), June 30, 1923.
23. A textbook of geology for use in universities, colleges, schools of science, etc., and for the general reader, Part II, second, revised edition. 724 pp., 237 figs., 47 pls., map, 1924. Review by Arthur Holmes, *Nature*, vol. 114, pp. 376-377, September 13, 1924.
24. The value of micro-fossils in petroleum exploration: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 5, pp. 539-553, September-October, 1924.
25. The paleogeography of Permian time in relation to the geography of earlier and later periods: *Pan-Pacific Sci. Cong., Australia*, 1923. *Proc.*, vol. 2, pp. 1079-1091, 6 figs. (paleogeographic maps) [1924].
26. Significance of Taconic orogeny: *Geol. Soc. America, Bull.*, vol. 36, no. 2, pp. 343-350, June 30, 1925.
27. John Mason Clarke, 1857-1925: *Am. Jour. Sci.*, 5th ser., vol. 10, p. 92, July, 1925.
28. (and Ruedemann, Rudolf). John Mason Clarke (1857-1925): *Science*, new ser., vol. 62, pp. 117-121, August 7, 1925.
29. (and Dart, J. Doris). Stratigraphy of the Port Daniel-Gascons area of southeastern Quebec: *Canada, Geol. Survey, Bull.* no. 44, pp. 35-58, 4 pls. (incl. map), 1926.
30. Memorial of John Mason Clarke: *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 49-93, 1 pl. (portr.), March 30, 1926.

Schuchert, Charles—Continued.

31. Stille's analysis and synthesis of the mountain structures of the earth: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 277-292, 2 figs., October, 1926.
32. (and LeVene, Clara M.). The earth and its rhythms. 410 pp., illus., New York, D. Appleton and Company, 1927.
33. James Furman Kemp, 1859-1926: *Am. Jour. Sci.*, 5th ser., vol. 13, pp. 99-100, January, 1927.
34. Winters in the Upper Devonian of New York and Acadia: *Am. Jour. Sci.*, 5th ser., vol. 13, pp. 123-131, February, p. 159, August, 1927.
35. Unconformities as seen in disconformities and diastems: *Am. Jour. Sci.*, 5th ser., vol. 13, pp. 260-262, March, 1927.
36. Charles Doolittle Walcott, paleontologist, 1850-1927: *Science*, new ser., vol. 65, pp. 455-456, May 13, 1927.
37. William Healey Dall, 1845-1927: *Am. Jour. Sci.*, 5th ser., vol. 14, p. 88, July, 1927.
38. Stuart Weller, 1870-1927: *Am. Jour. Sci.*, 5th ser., vol. 14, p. 332, October, 1927.
39. The Pennsylvanian-Permian systems of western Texas: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 381-401, November, 1927.
40. Biological classification, past and present: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 419-420, November, 1927.
41. Eugene Allen Smith: *Am. Jour. Sci.*, 5th ser., vol. 14, p. 428, November, 1927.
42. Frank Springer, 1848-1927: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 507-508, December, 1927.
43. Biographical memoir of Joseph Barrell, 1869-1919: *Nat. Acad. Sci., Biog. Mem.*, vol. 12, mem. 1, 40 pp., portr., 1927.
44. Emil Böse, 1868-1927: *Am. Jour. Sci.*, 5th ser., vol. 15, p. 88, January, 1928.
45. Israel Charles White, 1848-1927: *Am. Jour. Sci.*, 5th ser., vol. 15, p. 188, February, 1928.
46. Memorial of Frank Springer: *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 65-80, portr., March 30, 1928.
47. Middle Permian age of the late Paleozoic glaciation (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, pp. 158-159, March, 1928; *Geol. Soc. America*, vol. 39, no. 1, pp. 208-209, March 30, 1928.
48. Paleogeography of North America during Triassic and Jurassic times (abstract): *Pan-Am. Geologist*, vol. 49, no. 3, p. 240, April, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 275, March 30, 1928.
49. Charles Doolittle Walcott (1850-1927): *Am. Acad. Arts and Sci., Proc.*, vol. 62, no. 9, pp. 276-285, May, 1928.
50. The hypothesis of continental displacement. In *Theory of continental drift*, pp. 104-144, 9 figs., *Am. Assoc. Petroleum Geologists*, 1928.
51. The continental displacement hypothesis as viewed by Du Toit: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 266-274, September, 1928.
52. Review of the late Paleozoic formations and faunas, with special reference to the ice age of middle Permian time: *Geol. Soc. America, Bull.*, vol. 39, no. 3, pp. 769-886, 6 figs., tables, September 30, 1928.
53. Biographical memoir of John Mason Clarke: *Nat. Acad. Sci., Biog. Mem.*, vol. 12, mem. 8, pp. 183-244, portr., 1928.

Schultz, Alfred Reginald.

1. Oil possibilities in and around Baxter Basin, in the Rock Springs uplift, Sweetwater County, Wyoming: U. S. Geol. Survey, Bull. 702, 107 pp., 9 figs., 17 pls. (incl. maps), 1920; abstract by M. I. Goldman, Washington Acad. Sci., Jour., vol. 11, no. 17, pp. 418-419, October 19, 1921.

Schürmann, H. M. E.

1. Beitrag zur Petrographie der Hollywood Hills (Santa Monica-Gebirge) bei Los Angeles, Süd-Kalifornien: Centralbl. Mineralogie, Abt. A, no. 1, pp. 7-13, 1 fig., 1928.

Schwartz, George Melvin. See also Fairbanks, 12; Grout, 22, 23, 25.

1. Notes on textures and relationships in the Globe copper ores [Arizona]: Econ. Geology, vol. 16, nos. 4-5, pp. 322-329, 1 pl., 1 fig., 1921.
2. Chalersite at Fierro, New Mexico, with a note on its occurrence at Parry Sound, Ontario: Econ. Geology, vol. 18, no. 3, pp. 270-277, 2 figs., 1 pl., April-May, 1923.
3. Solving metallurgical problems with the reflecting microscope: Eng. and Min. Jour.-Press, vol. 116, no. 6, pp. 237-238, 4 figs., August 11, 1923.
4. New ore of the east Mesabi range: Eng. and Min. Jour.-Press, vol. 116, no. 10, pp. 409-412, 9 figs., September 8, 1923.
5. Stannite, its associated minerals and their paragenesis: Am. Mineralogist, vol. 8, no. 9, pp. 162-164, 2 figs., September, 1923.
6. An occurrence of xonotlite in Minnesota: Am. Mineralogist, vol. 9, no. 2, pp. 32-33, 2 figs., February, 1924.
7. The contrast in the effect of granite and gabbro intrusions on the Ely greenstone: Jour. Geology, vol. 32, no. 2, pp. 89-138, 11 figs., February-March, 1924.
8. Primary relationships and unusual chalcopyrite in copper deposits at Parry Sound, Ontario: Econ. Geology, vol. 19, no. 2, pp. 209-213, 2 figs., March, 1924.
9. On the nature and origin of hisingerite from Parry Sound, Ontario: Am. Mineralogist, vol. 9, no. 7, pp. 141-144, 2 figs., July, 1924.
10. Contact effects of gabbro and granite on ore deposition: Econ. Geology, vol. 19, no. 7, pp. 681-684, November, 1924.
11. Xonotlite and pectolite in a diabase pegmatite from Minnesota: Am. Mineralogist, vol. 10, no. 4, pp. 83-88, 2 figs., April, 1925.
12. A sulphide diabase from Cook County, Minnesota: Econ. Geology, vol. 20, no. 3, pp. 261-265, 1 pl., May, 1925.
13. Geology of the Etta spodumene mine, Black Hills, South Dakota: Econ. Geology, vol. 20, no. 7, pp. 646-659, 2 figs., November, 1925.
14. Geode concretions from the Black Hills, South Dakota: Am. Mineralogist, vol. 11, no. 2, pp. 30-33, 1 fig., February, 1926.
15. (and Leonard, R. J.) Alteration of spodumene in the Etta mine, Black Hills, South Dakota: Am. Jour. Sci., 5th ser., vol. 11, pp. 257-264, 2 figs., March, 1926.
16. Contact action of pegmatite on schist (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 150, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 158, March, 1926.
17. Intergrowths of chalcopyrite and cubanite; experimental proof of the origin of intergrowths and their bearing on the geologic thermometer: Econ. Geology, vol. 22, no. 1, pp. 44-61, 9 figs., January-February, 1927.

Schwartz, George Melvin—Continued.

18. Significance of intergrowths of chalcopyrite and cubanite (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 123–124, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 72, February, 1927.
19. Preparation of polished sections of ores: *Econ. Geology*, vol. 22, no. 2, pp. 193–195, March–April, 1927.
20. Iron sulphide pseudomorphs of plant structures in coal: *Jour. Geology*, vol. 35, no. 4, pp. 375–377, 3 figs., May–June, 1927.
21. Microscopic replacement versus injection in ores: *Am. Mineralogist*, vol. 12, no. 8, pp. 297–304, 12 figs., August, 1927.
22. (and Leonard, R. J.). Contact action of pegmatite on schist: *Geol. Soc. America, Bull.*, vol. 38, no. 4, pp. 655–664, 1 fig., 1 pl., December 30, 1927.
23. The Black Hills mineral region: *Am. Mineralogist*, vol. 13, no. 2, p. 56–63, February, 1928.
24. Experiments bearing on bornite-chalcocite intergrowths: *Econ. Geology*, vol. 23, no. 4, pp. 381–397, 2 pls., June–July, 1928; abstract, *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 163–166, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 73, February, 1928.
25. Dyscrasite and the silver-antimony constitution diagram: *Am. Mineralogist*, vol. 13, no. 10, pp. 495–503, 4 figs., October, 1928.
26. Copper veins on Susie Island, Lake Superior: *Econ. Geology*, vol. 23, no. 7, pp. 762–772, 9 figs., November, 1928.

Schwarz, E. H. L.

1. Terrestrial and lunar faults compared: *Jour. Geology*, vol. 36, no. 2, pp. 97–112, 8 figs., February–March, 1928.

Schwarzenbek, F. X. See Swigart, 1.

Schwenneson, Alvin Theodore.

1. Geology and water resources of the Gila and San Carlos valleys in the San Carlos Indian Reservation, Arizona: *U. S. Geol. Survey, Water-Supply Paper* 450, pp. 1–27, 4 pls. (maps), 2 figs., November 10, 1919; abstract by J. D. Sears, *Washington Acad. Sci., Jour.*, vol. 11, no. 3, pp. 58–59, February 4, 1921.
2. (and Overbeck, R. M., and Dubendorf, H. H.). The Long Beach oil field [California] and its problems: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 4, pp. 403–423, 6 figs., 1 pl., July–August, 1924.

Schwerin, Martin.

1. The Illinois-Kentucky fluorspar district: *Eng. and Min. Jour.*, vol. 122, no. 16, p. 623, October 16, 1926.
2. An unusual fluorspar deposit [Elizabethtown, Illinois]: *Eng. and Min. Jour.*, vol. 126, no. 9, pp. 335–339, 2 figs., September 1, 1928.

Science Service.

1. [Evolution of modern plants and of modern climates]: *Science*, new ser., vol. 65, p. xii, January 7, 1927.
2. The heat of Kilauea: *Science*, new ser., vol. 65, p. x, March 4, 1927.
3. Research on earthquakes: *Science*, new ser., vol. 65, p. x, April 1, 1927.
4. Fossil implements in Pliocene deposits [in western Nebraska]: *Science*, new ser., vol. 65, p. x, May 6, 1927.
5. The antiquity of man in America: *Sci. Monthly*, vol. 24, no. 5, pp. 477, 479, May, 1927.
6. The sinking of land as a cause for the Mississippi floods: *Science*, new ser., vol. 65, p. x, June 3, 1927.

Science Service—Continued.

7. The eruption of Kilauea: *Science*, new ser., vol. 66, p. x, July 15, 1927.
8. Clay layers in New Jersey and the ice sheet: *Science*, new ser., vol. 66, p. x, July 15, 1927.
9. Evidences of early man in America: *Science*, new ser., vol. 66, p. x, September 23, 1927.
10. Ancient inhabitants of America: *Science*, new ser., vol. 66, pp. xii, xiv, November 11, 1927.

Scott, David B.

1. Ore deposits of the Mogollon district [New Mexico]: *Mining and Metallurgy*, no. 158, sec. 1, p. 33, 1 fig. (abstract), sec. 33, 22 pp., 5 figs., February, 1920; (with discussion by H. G. Ferguson), *Am. Inst. Min. and Met. Eng., Trans.*, vol. 63, pp. 289-310, 5 figs., 1920.

Scott, Flora Murray.

1. Notes on the flora of the Miocene of the Tesla region, California: *Torrey Bot. Club, Bull.*, vol. 53, no. 6, pp. 403-410, 1 pl., June, 1926.

Scott, Gayle. See also Winton, H., 1; Winton, W. M., 2.

1. Some gerontic ammonites of the Duck Creek formation: *Texas Christian Univ. Quart.*, vol. 1, no. 1, 31 pp., 9 pls., April, 1924.
2. Études stratigraphiques et paléontologiques sur les terrains crétacés du Texas. Thesis, Université de Grenoble, 218 pp., 1 fig., 3 pls., Grenoble, 1926; *Grenoble, Univ., Annales, n. s., sec. sci., t. 3*, pp. 93-210 (1926).
3. The Woodbine sand of Texas interpreted as a regressive phenomenon: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 6, pp. 613-634, 2 figs., 1 pl., June, 1926.
4. On a new correlation of the Texas Cretaceous: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 157-161, August, 1926.
5. Ammonites of the genus *Dipoloceras*, and a new *Hamites* from the Texas Cretaceous: *Jour. Paleontology*, vol. 2, no. 2, pp. 108-118, 1 fig., 2 pls., June, 1928.
6. (and Moore, Marcus H.). Ammonites of enormous size from the Texas Cretaceous: *Jour. Paleontology*, vol. 2, no. 4, pp. 273-278, 2 pls., December, 1928.

Scott, Irving Day.

1. Inland lakes of Michigan: *Michigan Geol. Survey, Pub. 30* (Geol. Ser. 25), 383 pp., 93 figs., 20 pls., 1921.
2. Physiography of some Michigan dunes (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 140-141, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 2, pp. 149-150, March, 1927.
3. Ice push on lakes: *Michigan Acad. Sci., Papers*, vol. 7, pp. 107-123, 2 figs., 3 pls., 1927.
4. (and Belknap, Ralph L.). The Creelsboro natural bridge [Russell County, Kentucky]: *Michigan Acad. Sci., Papers*, vol. 7, pp. 125-133, 4 figs., 1927.

Scott, Walter W.

1. (and Stroud, B. K.). The Haynesville oil field, Claiborne Parish, Louisiana: *Louisiana, Dept. Conservation, Bull. no. 11*, 26 pp., map, January, 1922.
2. Preliminary report on underground conditions in the Haynesville oil field, Louisiana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 2, p. 142, March-April, 1922.

Scott, William Berryman.

1. Physiography, the science of the abode of man. 384 pp., illus., New York, P. F. Collier & Son Company, 1922.
2. Leidy's paleontological and geological work: Sci. Monthly, vol. 18, no. 4, pp. 433-439, April, 1924.
3. Paleontological and geological work [of Joseph Leidy]: Acad. Nat. Sci. Philadelphia, Proc., vol. 75 [Appendix] The Joseph Leidy Commemorative Meeting, pp. 36-43, 1924.
4. Geological climates: Geol. Soc. America, Bull., vol. 37, no. 1, pp. 261-278, March 30, 1926.
5. Development of American paleontology: Am. Philos. Soc., Proc., vol. 66, pp. 409-429, 1927.
6. The origin of the mammalian faunas of North and South America: Palaeobiologica, Jg. 1, Bd. 1, pp. 253-262, 1928.
7. Some applications of paleontology: Science, new ser., vol. 67, pp. 327-333, March 30, 1928.
8. Geological climates: Smithsonian Inst., Ann. Rept., 1927, pp. 271-287, 1928.

Seagle, B. F., jr.

1. Home of the world's largest deposit of cyanite [Yancy County, North Carolina]: Rocks and Minerals, vol. 2, no. 1, pp. 19-22, 4 figs., March, 1927.

Searight, Walter V.

1. Fossil annelid jaws from the Iowa Devonian: Iowa Acad. Sci., Proc., vol. 30, pp. 433-436, 1 pl. [1924].
2. Global distribution of *Fusulina* (abstract): Pan-Amer. Geologist, vol. 46, no. 5, p. 406, December, 1926.

Sears, Julian Ducker. See also Ashley, 4; Gill, A. C., 1; Hancock, 2; Jones, E. L., 5, 6; Overbeck, 3; Pack, R. W., 1; Rogers, G. S., 1; Westgate, 1.

1. Deposits of manganese ore in Costa Rica: U. S. Geol. Survey, Bull. 710, pp. 61-83, 1 pl. (map), 26 figs., December 30, 1919.
2. Deposits of manganese ore near Boqueron River, Panama: U. S. Geol. Survey, Bull. 710, pp. 85-91, 3 figs., December 30, 1919. Abstract, Washington Acad. Sci., Jour., vol. 10, no. 20, pp. 573-574, December 4, 1920.
3. Geology and oil and gas prospects of part of Moffat County, Colorado, and southern Sweetwater County, Wyoming: U. S. Geol. Survey, Bull. 751, pp. 269-319, 3 figs., 3 pls. (incl. map), December 13, 1924.
4. Relations of the Browns Park formation and the Bishop conglomerate and their rôle in the origin of Green and Yampa rivers: Geol. Soc. America, Bull., vol. 35, no. 2, pp. 279-304, 11 figs., 1 pl., June 30, 1924; abstract, no. 1, p. 93, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 146, March, 1924.
5. (and Bradley, W. H.). Relations of the Wasatch and Green River formations in northwestern Colorado and southern Wyoming: U. S. Geol. Survey, Prof. Paper 132, pp. 93-107, 2 figs., 2 pls. (incl. map), November 6, 1924.
6. Geology and coal resources of the Gallup-Zuni Basin, New Mexico: U. S. Geol. Survey, Bull. 767, 52 pp., 4 figs., 17 pls. (incl. maps), 1925.
7. Geology of the Baxter Basin gas field, Sweetwater County, Wyoming: U. S. Geol. Survey, Bull. 781, pp. 13-27, 1 fig., 5 pls. (incl. map), February 4, 1926.

Seashore, Paul T. See DeWolf, 7.

Seashore, Robert H.

1. Geology about Belton in northwestern Montana (abstract): *Pan-Am. Geologist*, vol. 42, no. 5, p. 374, December, 1924; *Iowa Acad. Sci. Proc.*, vol. 31, pp. 334-335 [1926?].

Secrist, Mark Howard.

1. Zinc deposits of east Tennessee: Tennessee, Dept. Education, Div. Geology, Bull. 31, 165 pp., 14 figs., 24 pls. (incl. map), 1924.

Segsworth, Walter E. See Wright, D. G. H., 3.

Segura, David. See also Barrera, 2.

1. El mercurio en México: *Bol. Minero*, t. 26, no. 1, pp. 16-49, 1 pl. (map), July, 1928.

Seismological Society of America.

1. The bibliographical bulletin of the eastern section of the Seismological Society of America; vol. 1, no. 1, 1926-vol. 3, no. 5, 1928. [Mimeographed.]

Selchow, D. H. See Putnam, P. C., 3.

Sellards, Elias Howard. See also Pratt, W. E., 11; Texas, Attorney General, 1.

1. Administrative report: Florida State Geol. Survey, Twelfth Ann. Rept., pp. vii-viii, 1919.
2. Literature relating to human remains and artifacts at Vero, Florida: *Am. Jour. Sci.*, 4th ser., vol. 47, pp. 358-360, May, 1919. Florida State Geol. Survey, Twelfth Ann. Rept., pp. 1-4, 1919.
3. Geologic sections across the everglades of Florida: Florida State Geol. Survey, Twelfth Ann. rept., pp. 67-76, 1 fig., 1919.
4. Review of the geology of Florida, with special reference to structural conditions: Florida State Geol. Survey, Twelfth Ann. Rept., pp. 105-141, 2 pls. (maps), 1 fig., 1919.
5. Geology of Florida: *Jour. Geology*, vol. 27, no. 4, pp. 286-302, 1 pl. (map), 2 figs., May-June, 1919.
6. Comanchean formations underlying Florida: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 13-16, 1 fig., July, 1919.
7. Structural conditions in the oil fields of Bexar County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 3, pp. 299-309, 1919.
8. Some characteristics of the Balcones fault zone (abstract): *Science*, new ser., vol. 51, p. 519, May 21, 1920.
9. The underground position of the Ellenburger formation in north central Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 4, no. 3, pp. 283-298, map, 1920.
10. The geology and mineral resources of Bexar County: Texas, Univ., Bull., no. 1932, 202 pp., 1 pl., 6 figs., map, March, 1920.
11. On the underground position of the Ellenburger formation in north central Texas; with a preliminary countour map: Texas, Univ., Bull. no. 1849, 32 pp., map, July, 1920.
12. (and Gunter, Herman). On the petroleum possibilities of Florida: Florida State Geol. Survey, Fourteenth Ann. Rept., 1921-22, pp. 33-135, 10 figs., map, 1922.
13. Notes on the oil and gas fields of Webb and Zapata counties: Texas, Univ., Bull., no. 2230, pp. 5-29, 1 fig., September, 1922.

Sellards, Elias Howard—Continued.

14. The underground position of the Austin formation in the San Antonio oil fields: Texas, Univ., Bull., no. 2230, pp. 30–40, 1 fig., September, 1922.
15. Well records in Panola County, including structural contour map: Texas, Univ., Bull., no. 2232, 33 pp., 2 pls., 1922.
16. The producing horizon in the Rios well in Caldwell County: Texas, Univ., Bull., no. 2239, 40 pp., November, 1922.
17. The Oklahoma-Texas boundary suit: Science, new ser., vol. 57, pp. 346–349, March 23, 1923.
18. (and Tharp, B. C., and Hill, R. T.). Investigation on the Red River made in connection with the Oklahoma-Texas boundary suit: Texas, Univ., Bull., no. 2327, 174 pp., 2 figs., 9 pls., 6 maps, August, 1923.
19. The Luling oil field in Caldwell County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 6, pp. 775–788, 2 figs., November–December, 1924.
20. Mineral resources of Texas: The South's Development, Manufacturers Record, vol. 86, no. 24, pt. 2, pp. 421–423, December 11, 1924.
21. (and Patton, Leroy T.). The subsurface geology of the Big Lake oil field: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 4, pp. 365–381, 9 figs., April, 1926.
22. Geographic distribution of geologists in the United States: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 3, pp. 305–306, March, 1927.
23. Unusual structural feature in the plains region of Texas (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 149, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, pp. 152–153, March, 1927.
24. The Florida phosphate deposits: Intern. Geol. Cong., XIV, Compt. rend., fasc. 1, pp. 297–305, 1 fig. (map), 1927; Pan-Am. Geologist, vol. 49, no. 3, pp. 183–194, April, 1928.
25. (and Schoch, E. P.). Minal deposits of potash in Midland County, Texas: Commercial Fertilizer, vol. 35, no. 5, pp. 49–51, November, 1927.
26. (and Schoch, E. P.). Core drill tests for potash in Midland County, Texas: Texas, Univ., Bull., no. 2801, pp. 158–201, 2 figs., 1928.
27. Fossil cycad localities in Texas (abstract): Pan-Am. Geologist, vol. 49, no. 3, p. 228, April, 1928.
28. Texas Bureau of Economic Geology: Pan-Am. Geologist, vol. 50, no. 1, pp. 75–80, August, 1928.

Semmes, Douglas Ramsay.

1. The geology of the San Juan district, Porto Rico: New York Acad. Sci., Scientific Survey of Porto Rico and the Virgin Islands, vol. 1, pt. 1, pp. 33–110, 4 pls., map, 26 figs., 1919.
2. Petroleum possibilities of Alabama: Part I, Northern Alabama: Alabama, Geol. Survey, Bull., no. 22, p. 9–120, 1 pl., 20 figs., 1920.
3. Oil possibilities in northern Alabama: Mining and Metallurgy, no. 159, sec. 1, p. 51 (abstract), sec. 5, 10 pp., 1 fig. (map), March, 1920; discussion by David White and Mowry Bates, Am. Inst. Min. and Met. Eng., Trans., [preprint] no. 1038, p. 60, January, 1921; vol. 65, pp. 140–150, 1 fig. (map), 1921.
4. Notes on the Tertiary intrusives of the lower Pecos Valley, New Mexico: Am. Jour. Sci., 4th ser., vol. 50, pp. 415–430, 7 figs., December, 1920.

Semmes, Douglas Ramsay—Continued.

5. Petroliferous formations of the Tampico Embayment, Mexico (abstract): Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, p. 101, January-February, 1921.

Sen, Janshi.

1. Genetic classification of rocks: Pan-Am. Geologist, vol. 41, no. 3, pp. 176-178, April, 1924.
2. Natural arrangement in crystal symmetry: Pan-Am. Geologist, vol. 42, no. 5, pp. 331-334, December, 1924.

Senécal, Clovis Omer.

1. Color printing of geological maps: Canada, Geol. Survey, Bull. no. 44, 4 pp., 4 pls., March 14, 1925.

Service, Jerry H. See also Neumann, F., 5, 10.

1. Seismic wave velocity and densities of crustal materials: Science, new ser., vol. 63, pp. 616-617, June 18, 1926.

Seward, Albert Charles.

1. A supposed Paleozoic angiosperm [from the coal measures of Illinois]: Bot. Gazette, vol. 76, no. 2, p. 215, October, 1923.
2. On a new species of *Tempskya* from Montana, *Tempskya knowltoni*, sp. nov.: Annals of Botany, vol. 38, pp. 485-507, 3 figs., 2 pls., July, 1924.
3. Notes sur la flore crétacique du Groenland: Soc. géol. Belgique, Livre jubilaire, 1874-1924, t. 1, fasc. 1, pp. 227-263, 6 figs., 3 pls. [n. d., 1925?].
4. The Cretaceous plant-bearing rocks of western Greenland: Roy. Soc. London, Philos. Trans., ser. B, vol. 215, pp. 57-175, 37 figs., 9 pls., August 9, 1926.

Seyler, Clarence A.

1. The microstructure of coal: Am. Inst. Min. and Met. Eng., Trans., vol. 71, pp. 117-126, 18 figs., 1925; [preprint], no. 1428, 10 pp., 18 figs., March, 1925; abstract, Mining and Metallurgy, vol. 6, no. 227, p. 571, November, 1925.

Shannon, Charles William.

1. (and Rockwell, F. G.). New oil and gas development in Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 3, pp. 277-281, 1920.
2. An Oklahoma meteorite: Oklahoma, Univ., Bull. (Proc. Oklahoma Acad. Sci., 1910-1920), new ser. no. 220, pp. 66-67, July 15, 1921.
3. Physiographic features and surface elevations [of Oklahoma]: Bureau Monthly, published by Bureau of Geology, Norman, Okla., vol. 1, no. 1, pp. 6-9, 1 fig. (map), April, 1925.
4. (and others). Coal in Oklahoma (revised and edited by C. L. Cooper): Oklahoma Geol. Survey, Bull. no. 4, 110 pp., 12 figs., 23 pls. (incl. maps), July, 1926.

Shannon, Earl Victor. See also Cross, 7; Gillson, 1; Hewett, 21; Hawkins, 3; Hovey 12; Larson, 2, 9, 10, 12; Palache, 7, 22, 32, 34; Ross, C. S., 6, 11, 12, 14, 15, 16, 20, 25; Wherry, 18.

1. Famous mineral localities; the datolite locality near Westfield, Massachusetts: Am. Mineralogist, vol. 4, no. 1, pp. 5-6, January, 1919.
2. Anglesite from the Coeur d'Alene district, Idaho: Am. Jour. Sci., 4th ser., vol. 47, pp. 287-292, 7 figs., April, 1919.

Shannon, Earl Victor—Continued.

3. Famous mineral localities; the Pelham asbestos mine, Massachusetts: *Am. Mineralogist*, vol. 4, no. 4, pp. 37–39, April, 1919.
4. Famous mineral localities; the Chester emery mine [Massachusetts]: *Am. Mineralogist*, vol. 4, no. 6, pp. 69–72, June, 1919.
5. Linarite and leadhillite from Idaho: *Am. Mineralogist*, vol. 4, no. 8, pp. 93–94, August, 1919.
6. On coarse gabbroid diabase in Westfield, Massachusetts: *Jour. Geology*, vol. 27, no. 7, pp. 579–581, October–November, 1919.
7. The occurrence of bindheimite as an ore mineral: *Econ. Geology*, vol. 15, no. 1, pp. 88–93, January–February, 1920.
8. A new description of amesite: *Am. Jour. Sci.*, 4th ser., vol. 49, pp. 96–98, February, 1920.
9. The trap quarry at Meriden, Connecticut: *Am. Mineralogist*, vol. 5, no. 2, p. 34, February, 1920.
10. Bismutoplacionite, a new mineral: *Am. Jour. Sci.*, 4th ser., vol. 49, pp. 166–168, March, 1920.
11. Strickland's quarry, Portland, Connecticut: *Am. Mineralogist*, vol. 5, no. 3, pp. 51–54, March, 1920.
12. The old lithia mine in Chatham, Connecticut: *Am. Mineralogist*, vol. 5, no. 4, pp. 82–84, April, 1920.
13. Diabantite, stilpnomelane, and chalcodite of the trap quarries of Westfield, Massachusetts: *U. S. Nat. Mus., Proc.*, vol. 57, pp. 397–403, 1920.
14. Petrography of some lamprophyric dike rocks of the Coeur d'Alene mining district, Idaho: *U. S. Nat. Mus., Proc.*, vol. 57, pp. 475–495, 3 pls., 4 figs., 1920.
15. Recent accessions in the division of applied geology: *U. S. Nat. Mus., Proc.*, vol. 58, pp. 323–326, 1920.
16. Analyses and optical properties of amesite and corundophilite from Chester, Massachusetts, and of chromium-bearing chlorites from California and Wyoming: *U. S. Nat. Mus., Proc.*, vol. 58, pp. 371–379, 1920.
17. Notes on anglesite, anthophyllite, calcite, datolite, sillimanite, stilpnomelane, tetrahedrite, and triplite: *U. S. Nat. Mus., Proc.*, vol. 58, pp. 437–453, 13 figs., 1920.
18. Some minerals from the old tungsten mine at Long Hill in Trumbull, Connecticut: *U. S. Nat. Mus., Proc.*, vol. 58, pp. 469–482, 1 fig., 1920.
19. Boulangerite, bismutoplacionite, naumannite, and a silver-bearing variety of jamesonite: *U. S. Nat. Mus., Proc.*, vol. 58, pp. 589–607, 1920.
20. An occurrence of naumannite in Idaho: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 390–391, November, 1920.
21. Description of ferroanthophyllite, an orthorhombic iron amphibole from Idaho, with a note on the nomenclature of the anthophyllite group: *U. S. Nat. Mus., Proc.*, vol. 59, pp. 397–401, 1921.
22. Description of vivianite encrusting a fossil tusk from gold placers of Clearwater County, Idaho: *U. S. Nat. Mus., Proc.*, vol. 59, pp. 415–417, 1 fig., 1 pl., 1921.
23. A crystallographic study of the datolite from Westfield, Massachusetts: *U. S. Nat. Mus., Proc.*, vol. 59, pp. 479–539, 24 figs., 4 pls., 1921.
24. Ludwigites from Idaho and Korea: *U. S. Nat. Mus., Proc.*, vol. 59, pp. 667–676, 1921.

Shannon, Earl Victor—Continued.

25. Mineralogy of some black sands from Idaho, with a description of the methods used for their study: U. S. Nat. Mus., Proc., vol. 60, art. 3, 33 pp., 28 figs., 1921.
26. Massive laumontite from Montana: Am. Mineralogist, vol. 6, no. 1, pp. 6-7, January, 1921.
27. Owyheeite [Owyhee County, Idaho]: Am. Mineralogist, vol. 6, no. 4, pp. 82-83, April, 1921.
28. Additional notes on crystallography and composition of boulangerite: Am. Jour. Sci., 5th ser., vol. 1, pp. 423-426, May, 1921.
29. The old cobalt mine in Chatham, Connecticut: Am. Mineralogist, vol. 6, no. 5, pp. 88-90, May, 1921.
30. On galenobismutite from a gold-quartz vein in Boise County, Idaho: Washington Acad. Sci., Jour., vol. 11, no. 13, pp. 298-300, July 19, 1921.
31. The old tungsten mine in Trumbull, Connecticut: Am. Mineralogist, vol. 6, no. 8, pp. 126-128, August, 1921.
32. Notes on an andorite-bearing silver ore from Nevada: U. S. Nat. Mus., Proc., vol. 60, art. 16, 5 pp., 1922.
33. Velardeñite from a new locality in Tulare County, California: U. S. Nat. Mus., Proc., vol. 60, art. 22, 4 pp., 1922.
34. Mineralogic notes on pucherite, pyrite, trichalcite, and wavellite: U. S. Nat. Mus., Proc., vol. 62, art. 9, 10 pp., 10 figs., 1922.
35. Notes on the mineralogy of three gouge clays from precious-metal veins: U. S. Nat. Mus., Proc., vol. 62, art. 15, 11 pp., 1922.
36. Cristobalite from the Columbia River basalt of Spokane, Washington: Washington Acad. Sci., Jour., vol. 12, no. 8, pp. 195-196, April 19, 1922.
37. (and Wherry, E. T.) Notes on white chlorites: Washington Acad. Sci., Jour., vol. 12, no. 10, pp. 239-241, May 19, 1922.
38. Note on the cyprine from Franklin Furnace, New Jersey: Am. Mineralogist, vol. 7, no. 8, pp. 140-142, August, 1922.
39. Note on a garnet from a pegmatite in Idaho: Am. Mineralogist, vol. 7, no. 10, pp. 171-173, October, 1922.
40. On siderite and associated minerals from the Columbia River basalt at Spokane, Washington: U. S. Nat. Mus., Proc., vol. 62, art. 12, pp. 1-19, 14 figs., 3 pls., 1923.
41. Crystallographic notes on stephanite in a silver ore from Mexico: U. S. Nat. Mus., Proc., vol. 63, art. 11, 6 pp., 4 figs., 1923.
42. Note on leuchtenbergite from Philipsburg, Montana: Am. Mineralogist, vol. 8, no. 1, pp. 8-10, January, 1923.
43. Note on cobaltiferous gahnite from Maryland: Am. Mineralogist, vol. 8, no. 8, pp. 147-148, August, 1923.
44. Barrandite from Manhattan, Nevada: Am. Mineralogist, vol. 8, no. 10, pp. 182-184, October, 1893.
45. Benjaminite, a new sulphosalt mineral of the klaprotholite group: U. S. Nat. Mus., Proc., vol. 65, art. 24, 9 pp., 3 figs., 1924.
46. The mineralogy and petrology of intrusive diabase at Goose Creek, Loudoun County, Virginia: U. S. Nat. Mus., Proc., vol. 66, art. 2, 86 pp., 32 figs., 9 pls., 1924.
47. An occurrence of iron-cobalt-bearing gersdorffite in Idaho: Washington Acad. Sci., Jour., vol. 14, no. 13, pp. 275-277, July 19, 1924.
48. Chromium-colored margarite from Montgomery County, Maryland: Am. Mineralogist, vol. 9, no. 9, pp. 194-195, September, 1924.

Shannon, Earl Victor—Continued.

49. An iron amphibole similar to hudsonite from Custer County, Idaho: *Am. Jour. Sci.*, 5th ser., vol. 8, pp. 323–324, October, 1924.
50. The present status of the mineral remingtonite: *Am. Mineralogist*, vol. 9, no. 10, pp. 208–209, October, 1924.
51. An occurrence of xonotlite at Leesburg, Virginia: *Am. Mineralogist*, vol. 10, no. 1, pp. 12–13, January, 1925.
52. A re-examination of beaumontite from Baltimore [Maryland]: *Am. Mineralogist*, vol. 10, no. 2, pp. 31–34, February, 1925.
53. (and Larsen, Esper S.). Merrillite and chloraptite from stony meteorites: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 250–260, March, 1925.
54. Boulangerite from the Cleveland mine, Stevens County, Washington: *Washington Acad. Sci., Jour.*, vol. 15, no. 9, pp. 195–197, May 4, 1925.
55. Mineralogy and petrography of Triassic limestone conglomerate metamorphosed by intrusive diabase at Leesburg, Virginia: *U. S. Nat. Mus., Proc.*, vol. 66, art. 28, 31 pp., 8 figs., 3 pls., May 22, 1925.
56. The so-called halloysite of Jones Falls, Maryland: *Am. Mineralogist*, vol. 10, no. 7, pp. 159–161, July, 1925.
57. Jamesonite from Slate Creek, Custer County, Idaho: *Am. Mineralogist*, vol. 10, no. 8, pp. 194–197, August, 1925.
58. Tetradymite from the Hailey quadrangle, Idaho: *Am. Mineralogist*, vol. 10, no. 8, pp. 198–199, August, 1925.
59. Petzite from the Last Chance mine, Cornucopia district, Oregon: *Washington Acad. Sci., Jour.*, vol. 15, no. 14, pp. 342–344, August 19, 1925.
60. Magnesite and kammerite from Low's mine (Line Pit), Cecil County, Maryland: *Washington Acad. Sci., Jour.*, vol. 15, no. 19, pp. 434–438, November 19, 1925.
61. The minerals of Idaho: *U. S. Nat. Mus., Bull.* 131, 483 pp., 170 figs., 19 pls., 1926.
62. Mineralogy of the chrome ore from Etchison, Montgomery County, Maryland: *Am. Mineralogist*, vol. 11, no. 1, pp. 16–20, January, 1926.
63. (and Larsen, Esper S.). A peculiar manganiferous serpentine from Franklin Furnace [New Jersey]: *Am. Mineralogist*, vol. 11, no. 2, pp. 28–30, February, 1926.
64. Some minerals from the Kensington mica mine, Montgomery County, Maryland: *Am. Mineralogist*, vol. 11, no. 2, pp. 35–37, February, 1926.
65. (and Berman, H.). Barysilite from Franklin Furnace, New Jersey: *Am. Mineralogist*, vol. 11, no. 5, pp. 130–132, May, 1926.
66. The identity of carrolite with linnaeite: *Am. Jour. Sci.*, 5th ser., vol. 11 pp. 489–493, June, 1926.
67. The serpentine locality of Montville, New Jersey: *Am. Mineralogist*, vol. 12, no. 2, pp. 53–55, February, 1927.
68. The oxidation of meteoric irons with comparative descriptions of two new examples of magnetic iron oxides from terrestrial sources: *U. S. Nat. Mus., Proc.*, vol. 72, art. 21, 15 pp., 1927.
69. Calcite oolites with pentagonal dodecahedral form: *Washington Acad. Sci., Jour.*, vol. 17, no. 16, pp. 409–417, October 4, 1927.
70. "Blythite" and the manganese garnet from Amelia, Virginia: *Washington Acad. Sci., Jour.*, vol. 17, no. 17, pp. 444–452, October 19, 1927.

Shannon, Earl Victor—Continued.

71. Apatite crystals from Wiant's quarry, near Pilot, Maryland: *Am. Mineralogist*, vol. 12, no. 11, pp. 408-410, 2 figs., November, 1927.
72. On the determination of alkalies in rocks and minerals: *Am. Mineralogist*, vol. 12, no. 11, pp. 411-413, November, 1927.
73. A lead ore consisting of native lead, leadhillite, and lithargite [Hailey, Idaho]: *Econ. Geology*, vol. 22, no. 8, pp. 826-829, December, 1927.
74. Ammoniojarosite, a new mineral of the jarosite group from Utah: *Am. Mineralogist*, vol. 12, no. 12, pp. 424-426, December, 1927.
75. (and Gonyer, Forest A.). Almandite-spessartite garnet from Gwynns Falls, Baltimore: *Washington Acad. Sci., Jour.*, vol. 17, no. 21, pp. 534-536, December 19, 1927.
76. (and Gonyer, Forest A.). Natrojarosite from Kingman, Arizona: *Washington Acad. Sci., Jour.*, vol. 17, no. 21, pp. 536-537, December 19, 1927.
77. Vermiculite from the Bare Hills near Baltimore, Maryland: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 20-24, January, 1928.
78. Miargyrite and tetrahedrite from the Flint district, Idaho: *Am. Mineralogist*, vol. 13, no. 1, pp. 18-21, 2 figs., January, 1928.
79. Xanthonconite and associated minerals from the General Petite mine, Atlanta district, Idaho: *Am. Mineralogist*, vol. 13, no. 9, pp. 469-475, September, 1928.

Shapley, Harlow.

1. Note on a possible factor in changes of geological climate: *Jour. Geology*, vol. 29, no. 6, pp. 502-504, September-October, 1921.

Shaw, Edmund.

1. The sand and gravel resources of the Trinity River district, Texas: *Rock Products*, vol. 31, no. 6, pp. 66-71, 20 figs., March 17, 1928.

Shaw, Eugene Wesley. See also Brokaw, 1; Johnson, R. H., 2; Louderback, 1; Matteson, 2; Redwood, 1; Weller, 19; Willis, 4.

1. (and Mather, Kirtley F.). The oil fields of Allen County, Kentucky, with notes on the oil geology of adjoining counties: *U. S. Geol. Survey, Bull.* 688, 126 pp., 10 pls. (incl. maps), 10 figs., 1919. Abstract by R. W. Stone, *Washington Acad. Sci., Jour.*, vol. 9, no. 15, p. 439, September 19, 1919.
2. An interpretation of the so-called paraffin dirt of the Gulf Coast oil fields (discussion): *Am. Inst. Min. Eng., Bull.* no. 145, pp. 98-101, January, 1919.
3. Mexican petroleum and the war (abstract): *Geol. Soc. America, Bull.*, vol. 30, pp. 109-110, March 31, 1919.
4. Stratigraphy of the Gulf Coastal Plain as related to salt domes (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 10, pp. 289-291, May 19, 1919.
5. Present tendencies in geology; sedimentation: *Washington Acad. Sci., Jour.*, vol. 9, no. 17, pp. 513-521, October 19, 1919.
6. (and Ports, P. L.). Natural gas resources available to Dallas and other cities of central north Texas: *U. S. Geol. Survey, Bull.* 716, pp. 55-89, 2 pls. (maps), 10 figs., 1920; abstract by M. I. Goldman, *Washington Acad. Sci., Jour.*, vol. 11, no. 8, pp. 193-194, April 19, 1921.
7. Physical and geographic criteria in the study of sedimentary deposits: *Geol. Soc. America, Bull.*, vol. 31, no. 4, pp. 411-418, November 30, 1920.

Shaw, Eugene Wesley—Continued.

8. Description of the New Athens and Okawville quadrangles: U. S. Geol. Survey, Geol. Atlas U. S., New Athens-Okawville folio, Illinois (no. 213), 12 pp., 6 figs., 4 maps, 1921.
9. Description of the Carlyle and Centralia quadrangles [Illinois]: U. S. Geol. Survey, Geol. Atlas U. S., Carlyle-Centralia folio, Illinois (no. 216), 10 pp., 5 figs., 4 maps, 1923.
10. Memorial of Joseph William Winthrop Spencer: Geol. Soc. America, Bull., vol. 35, no. 1, pp. 25-37, portr., March 30, 1924.

Shaw, G. R.

1. The chemistry of platinum at high temperatures and pressures: Econ. Geology, vol. 16, no. 8, pp. 524-548, December, 1921.

Shaw, H

1. New method of radio-aeronautic prospecting: Econ. Geology, vol. 20, no. 4, pp. 391-395, June-July, 1925.

Shaw, J. B.

1. Fire clays of Pennsylvania: Pennsylvania Geol. Survey, 4th ser., Bull. M 10, 69 pp., 9 figs., 1928.

Shaw, John W.

1. Ore horizons at Cobalt: Eng. and Min. Jour.-Press, vol. 115, no. 18, p. 791, May 5, 1923.

Shaw, S. F.

1. The ore deposits of Sierra Mojada, Coahuila, Mexico (with discussion): Am. Inst. Min. and Met. Eng., Trans., vol. 68, pp. 556-586, 3 figs., 1923; [preprint] no. 1182, 17 pp., 3 figs., August, 1922; abstract, Mining and Metallurgy, no. 188, pp. 33-34, 2 figs., August, 1922.

Shea, E. F.

1. Water conditions in the Urschel pool, Marion County, Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 5, pp. 426-443, 10 figs., September-October, 1922.

Shead, Arthur Curtis.

1. An Oklahoma meteorite: Oklahoma Acad. Sci., Proc., vol. 2 (Oklahoma, Univ., Bull., new ser. no. 247), p. 79, October 1, 1922.
2. Phosphate rocks in Oklahoma: Oklahoma Acad. Sci., Proc., vol. 3 (Oklahoma, Univ., Bull., new ser. no. 271), pp. 97-102, 3 figs., October 1, 1923.
3. Notes on barite in Oklahoma with chemical analyses of sand barite rosettes: Oklahoma Acad. Sci., proc., vol. 3 (Oklahoma, Univ., Bull., new ser. no. 271), pp. 102-106, October 1, 1923.
4. "Drillite" and its significance to the geologist: Oklahoma Acad. Sci., Proc., vol. 3 (Oklahoma, Univ., Bull., new ser. no. 271), pp. 107-108, October 1, 1923.
5. Notes on the Black Mesa basalt: Oklahoma Acad. Sci., Proc., vol. 3 (Oklahoma, Univ., Bull., new ser. no. 271), pp. 108-113, 2 figs., October 1, 1923.
6. Notes on permanent labels for thin rock sections mounted on glass slides: Oklahoma Acad. Sci. (Univ. Oklahoma Bull., new ser. no. 322), Proc., vol. 4, p. 120, December 1, 1925.
7. Notes on a possible explanation for the circular white spots found in the red shales of the Permian red beds: Oklahoma Acad. Sci., Proc., vol. 5, 1925 (Oklahoma, Univ., Bull., new ser. no. 330, Univ. Studies no. 22), pp. 127-128, April 1, 1926.

Shead, Arthur Curtis—Continued.

8. (and Williams, Guy Yandell, and others). Chemical analyses of Oklahoma mineral raw materials: Oklahoma, Univ., Bull., new ser. 423, 138 pp., December, 1928.

Shedd, Solon.

1. Mineral resources of Washington. In Northwest Mines Handbook, vol. 1, pp. 146-149, published by Sidney Norman, Spokane, Washington, 1918.
2. Coke and limestone of Washington: Washington, Dept. Conservation, Division of Geology, Bull. no. 27, pp. 117-146, 1922.
3. Topography and geology of the Okanogan Highlands and Columbia Plateau of Washington (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 75, March 30, 1923.
4. The mineral resources of Washington: Washington, Division of Geology, Bull. no. 30, pp. 1-183, 3 figs., 1924.
5. Report of the supervisor of geology from October 1, 1922, to September 30, 1924; Washington, Dept. Conservation and Development, 12 pp., map, Olympia, 1924.
6. Washington Geological Survey [activities]: Pan-Am. Geologist, vol. 44, no. 4, pp. 326-327, November, 1925.

Sheldon, Pearl G.

1. A new dike near Ithaca, New York: Science, new ser., vol. 53, pp. 20-21, January 7, 1921.
2. Significant characteristics of glacial erosion as illustrated by an erosion channel: Jour. Geology, vol. 34, no. 3, pp. 257-265, 2 figs., April-May, 1926.
3. On the association of faulting with dike intrusion: Jour. Geology, vol. 35, no. 4, pp. 353-367, 6 figs., May-June, 1927.
4. Note on the angle of fracture cleavage: Jour. Geology, vol. 36, no. 2, pp. 171-175, 1 fig., February-March, 1928.
5. Some sedimentation conditions in middle Portage rocks: Am. Jour. Sci., 5th ser., vol. 15, pp. 243-252, 3 figs., March, 1928.

Shenon, P. J.

1. Gold at Bannack, Montana: Eng. and Min. Jour., vol. 123, no. 8, p. 326, 3 figs., February 19, 1927.
2. Geology and ore deposits of the Birch Creek district, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 27, 25 pp., 5 pls. (incl. maps), April, 1928 [mimeographed].

Shepard, Francis Parker. See also Chamberlin, R. T., 9; Leith, 10; Schuchert, 20.

1. Possible Silurian tillite in southeastern British Columbia: Jour. Geology, vol. 30, no. 1, pp. 77-81, 2 figs., January-February, 1922.
2. The structural relation of the Purcell Range and the Rocky Mountains of Canada: Jour. Geology, vol. 30, no. 2, pp. 130-139, 7 figs., February-March, 1922. Abstract, Geol. Soc. America, Bull., vol. 33, no. 1, pp. 91-93, March 31, 1922.
3. Problems in stratigraphy along the Rocky Mountain trench: Jour. Geology, vol. 30, no. 5, pp. 361-376, 4 figs., July-August, 1922.
4. Isostasy as a result of earth shrinkage: Jour. Geology, vol. 31, no. 3, pp. 208-216, 4 figs., April-May, 1923; abstract, Geol. Soc. America, Bull., vol. 34, no. 1, pp. 62-63, March 30, 1923.
5. Indications of important horizontal compression in the Colorado Rockies: Am. Jour. Sci., 5th ser., vol. 5, pp. 403-408, 5 figs., May, 1923.

Shepard, Francis Parker—Continued.

6. To question the theory of periodic diastrophism: *Jour. Geology*, vol. 31, no. 7, pp. 599–613, 2 figs., October–November, 1923.
7. The bearing of normal faults on the hypothesis of a shrinking earth: *Am. Jour. Sci.*, 5th ser., vol. 7, pp. 146–154, 5 figs., February, 1924.
8. Mountain building without loss of isostatic equilibrium (abstract, with discussion by William Bowie and W. H. Hobbs): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 62–63, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, p. 135, March, 1924.
9. Lantern slide examinations in geology: *Illinois State Acad. Sci., Trans.*, vol. 18, pp. 414–417, 1 fig., 3 pls., 1925.
10. Some transverse faults along the Rocky Mountain trench (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 156, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, pp. 151–152, March, 1925.
11. Further investigations of the Rocky Mountain trench [British Columbia]: *Jour. Geology*, vol. 34, no. 7, pp. 623–641, 13 figs. (incl. map), October–November, 1926.
12. Influence of oscillating sea level on the development of the continental shelf (abstract): *Science*, new ser., vol. 66, p. 462, November 11, 1927.
13. Significance of submerged deltas in the interpretation of the continental shelves: *Geol. Soc. America, Bull.*, vol. 39, no. 4, pp. 1157–1170, 8 figs., December 30, 1928; abstract, *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 157–158, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 70, February, 1928.

Shepard, T. P. See Leith, 10.

Shepherd, Ernest Stanley. See also Ellsworth, 19.

1. The composition of the gases of Kilauea: *Hawaiian Volcano Observatory, Bull.*, vol. 7, no. 7, pp. 94–97, July, 1919. Abstract, *Washington Acad. Sci., Jour.*, vol. 10, no. 1, pp. 23–24, January 4, 1920.
2. Two gas collections from Mauna Loa: *Hawaiian Volcano Observatory, Monthly Bull.*, vol. 8, no. 5, pp. 65–67, May, 1920; abstract, *Washington Acad. Sci., Jour.* vol. 11, no. 17, pp. 420–421, October 19, 1921.
3. The analysis of gases obtained from volcanoes and from rocks: *Jour. Geology*, vol. 33, no. 3, suppl., pp. 289–370, 28 figs., April–May, 1925.
4. Note on the chemical significance of engulfment at Kilauea (with discussion): *Washington Acad. Sci., Jour.*, vol. 15, no. 18, November 4, 1925; *Bull. Volcanologique*, 2^e ann., nos. 5–6, pp. 328–332, 1925.
5. (and Merwin, H. E.). Gases of the Mont Pelée lavas of 1902: *Jour. Geology*, vol. 35, no. 2, pp. 97–116, February–March, 1927.
6. The present status of the volcano gas problem: *Nat. Research Council, Bull.* no. 61, pp. 259–263, July, 1927.

Sheppard, George.

1. Recent development work relating to petroleum in western Canada [Alberta and Saskatchewan]: *Canadian Inst. Min. and Met., Monthly Bull.*, no. 113, pp. 802–818, September, 1921; *Trans.*, vol. 24, pp. 60–74, 10 figs. [1922].

Sherman, R. W.

1. The West Goleta district [California]; a summary of the geology of the Edwards anticline: *Oil Bull.*, vol. 13, no. 11, pp. 1144, 1165, November, 1927.

Sherwood, Earl. See Kentucky G. S., 28, 35.

Sherzer, William Hittell.

1. Explosive eruptions of Kilauea: Science, new ser., vol. 57, pp. 459-461, April 20, 1923.
2. A new find of the woolly elephant in Michigan: Science, new ser., vol. 65, p. 616, June 24, 1927.

Shideler, William H.

1. Some faunal correlations of the Richmond (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 130, March 30, 1923.
2. The basal Richmond of the Cincinnati province (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 132 March 30, 1923.
3. Recurrent faunas in the Cincinnati (abstract): Ohio Acad. Sci., Proc., vol. 8, pt. 4, p. 173, 1928; Ohio Jour. Sci., vol. 28, no. 3, p. 151, May, 1928.
4. A re-study of the Hamburg, Indiana, section (abstract): Ohio Acad. Sci., Proc., vol. 8, pt. 4, p. 173, 1928; Ohio Jour. Sci., vol. 28, no. 3, p. 151, May, 1928.

Shiltz, John H.

1. Soil survey of Whitley County: Indiana, Dept. Geology and Nat. Res., 41st Ann. Rept., pp. 67-78, 1917.

Shimek, Bohumil.

1. Further notes on *Helicina occulta* Say: Iowa Acad. Sci., Proc., vol. 26, pp. 385-390 [1920].
2. The prairies again: Science, new ser., vol. 68, pp. 321-323, October 5, 1928.

Shimer, Hervey Woodburn.

1. Samuel Wendell Williston (1852-1918): Am. Acad. Arts, Proc., vol. 54, no. 6, pp. 421-423, September, 1919.
2. Permo-Triassic of northwestern Arizona: Geol. Soc. America, Bull., vol. 30, no. 4, pp. 471-497, 1 fig., December 31, 1919; abstract, no. 1, p. 155, March 31, 1919.
3. Some forces in man's social evolution: Science, new ser., vol. 60, pp. 199-203, February 29, 1924.
4. An introduction to earth history. viii, 411 pp., 141 figs., Boston, Ginn and Company, c. 1925.
5. Memorial of Frederick Burritt Peck: Geol. Soc. America, Bull., vol. 37, no. 1, pp. 111-114, 1 pl. (portr.), March 30, 1926.
6. Upper Paleozoic faunas of the Lake Minnewanka section, near Banff, Alberta: Canada, Geol. Survey, Bull. no. 42, pp. 1-84, 1 fig. 8 pls., May 8, 1926.
7. A Triassic coral reef fauna in British Columbia: Canada, Geol. Survey, Bull. no. 42, pp. 85-89, May 8, 1926.
8. (and Lindgren, Waldemar). Memorial of William Otis Crosby: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 34-45, portr., March 30, 1927.

Shipley, John Wesley.

1. The Valley of Ten Thousand Smokes: Science, new ser., vol. 49, pp. 589-591, June 20, 1919.
2. Some chemical observations on the volcanic emanations and incrustations in the Valley of Ten Thousand Smokes, Katmai, Alaska: Am. Jour. Sci., 4th ser., vol. 50, pp. 141-153, 1 fig., August, 1920.

Shipton, Washburne Denning.

1. A new exposure of Mississippian strata near Saint Louis, Missouri: Washington Univ. Studies, vol. 11, no. 1, pp. 59–63, 2 pls., July, 1923.
2. The occurrence of Nebraskan drift in northern Missouri: Washington Univ. Studies, vol. 12, Scientific ser., no. 1, pp. 53–71, 1924.

Short, Maxwell Naylor. See also Capps, 10; Locke, 4.

1. (and Ettlinger, I. A.). Ore deposition and enrichment at the Magma mine, Superior, Arizona: Am. Inst. Min. and Met. Eng., Trans. [preprint], no. 1552, 54 pp., 29 figs. (incl. map), February, 1926; (with discussion), Trans. vol. 74, pp. 174–222, 29 figs. (incl. map), 1926; abstract, Mining and Metallurgy, vol. 7, no. 232, pp. 175–176, 1 fig., April, 1926.
2. The preparation of polished sections of ores: Econ. Geology, vol. 21, no. 7, pp. 648–664, 2 figs., 1926.
3. (and Henderson, E. P.). Tetradymite from Hachita, New Mexico: Am. Mineralogist, vol. 11, no. 11, pp. 316–317, November, 1926.

Short, R. T. See Bybee, 2.

Shrock, Robert R. See also Cumings, 3, 4, 5.

1. Some interesting physiographic features of the upper Wabash drainage basin in Indiana: Indiana Acad. Sci., Proc., vol. 37, pp. 125–139, 4 figs., 1928.
2. A new graptolite fauna from the Niagaran of northern Indiana: Am. Jour. Sci., 5th ser., vol. 16, pp. 1–38, 10 figs., 5 pls., July, 1928.

Schufeldt, Robert Wilson.

1. A comparative study of some subfossil remains of birds from Bermuda, including the "cahow": Carnegie Mus., Annals. vol. 13, nos. 3–4, pp. 333–418, 16 pls., March, 1922.

Shuler, Ellis William.

1. The geology of Dallas County: Texas, Univ., Bull. no. 1818, 54 pp., 21 pls. (incl. map), March 25, 1918.
2. Occurrence of human remains with Pleistocene fossils, Lagow sand pit, Dallas, Texas: Science, new ser., vol. 57, pp. 333–334, March 16, 1923.

Siebenthal, Claude Ellsworth, 1869–1930.

1. Cadmium in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 1–12, May 8, 1919.
2. Zinc and cadmium in 1916: U. S. Geol. Survey, Mineral Resources, 1916, pt. 1, pp. 809–835, 1 pl., June 9, 1919.
3. Lead in 1916: U. S. Geol. Survey, Mineral Resources, 1916, pt. 1, pp. 837–854, 1 pl., June 10, 1919.
4. Zinc in 1917: U. S. Geol. Survey, Mineral Resources, 1917, pt. 1, pp. 855–879, April 6, 1920.
5. Lead in 1917: U. S. Geol. Survey, Mineral Resources, 1917, pt. 1, pp. 881–897, 1 pl., 1920.
6. Cadmium in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 1, pp. 1–8, June 18, 1920.
7. Lead in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 937–971, 1 pl., January 6, 1921.
8. Zinc in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 1, pp. 1027–1074, 2 figs., 1 pl., April 29, 1921.

Siebenthal, Claude Ellsworth—Continued.

9. (and Stoll, A.). Cadmium in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 1, pp. 1-6, May 12, 1921.
10. (and Stoll, A.). Lead in 1919 (general report): U. S. Geol. Survey, Mineral Resources, 1919, pt. 1, pp. 313-330, 1 pl., October 6, 1921.
11. (and Stoll, A.). Zinc in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 1, pp. 653-664, 1 pl., October 13, 1921.
12. (and Stoll, A.). Lead in 1920 (general report): U. S. Geol. Survey, Mineral Resources, 1920, pt. 1, pp. 85-95, 1 fig., October 14, 1921.
13. (and Stoll, A.). Zinc in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 1, pp. 221-237, December 19, 1921.
14. (and Stoll, A.). Cadmium in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 1-5, April 10, 1922.
15. (and Stoll, A.). Zinc in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 21-33, June 17, 1922.
16. (and Stoll, A.). Lead in 1921 (general report): U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 35-43, July 3, 1922.
17. (and Stoll, A.). Lead and zinc pigments and salts in 1921: U. S. Geol. Survey, Mineral Resources, 1921, pt. 1, pp. 55-62, 1 fig., July 10, 1922.
18. (and Stoll, A.). Cadmium in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 1-5, May 22, 1923.
19. (and Stoll, A.). Lead in 1922 (general report): U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 27-36, 1 fig., July 17, 1923.
20. (and Stoll, A.). Zinc in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 37-52, 2 figs., July 18, 1923.
21. (and Stoll, A.). Lead and zinc pigments and salts in 1922: U. S. Geol. Survey, Mineral Resources, 1922, pt. 1, pp. 77-85, 2 figs., July 25, 1923.
22. (and Stoll, A.). Zinc in 1923 (smelter report): U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 79-99, 2 figs., October 10, 1924.
23. (and Phillips, E. R.). Barytes and barium products in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 2, pp. 79-88, 1 fig., October 16, 1924.
24. (and Stoll, A.). Lead and zinc pigments and salts in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 119-128, 2 figs., November 3, 1924.
25. (and Stoll, A.). Lead in 1923 (smelter report): U. S. Geol. Survey, Mineral Resources, 1923, pt. 1, pp. 129-144, 1 fig., November 4, 1924.
26. (and Stoll, A.). Cadmium in 1923-1924: U. S. Geol. Survey, Mineral Resources, 1924, pt. 1, pp. 7-11, 1925.
27. Balance sheets for mine and smelter production of domestic copper, lead, and zinc: *Econ. Geology*, vol. 20, no. 1, pp. 83-96, January-February, 1925.
28. Contour map of the surface of the beds underlying the Cherokee shale in a portion of the Picher district, Oklahoma, showing relations of ore bodies to the surface contoured: [U. S. Geol. Survey], 4 pp. [mimeographed] and map, April 20, 1925.
20. (and Stoll, A.). Zinc in 1924 (smelter report): U. S., Bur. Mines, Mineral Resources U. S., 1924, pt. 1, pp. 235-254, 2 figs., April 13, 1926.

Siegfriedt, J. C. F. See Matthew, 37.

Siegfus, Stanley S.

1. A reconnaissance of the Promontory Point mining district, Utah: Utah, Univ., Bull., vol. 15, no. 2 (Eng. Exper. Sta., Bull. no. 15), pp. 57-72, 5 figs., January, 1925.
2. Some geological features of the Washington magnesite deposits: Eng. and Min. Jour., vol. 124, no. 22, pp. 853-857, 6 figs., November 26, 1927.

Sill, Rush T.

1. Chemistry of enrichment of silver deposits: Mining and Metallurgy, no. 189, pp. 21-23, September, 1922.

Simmersbach, B.

1. Die bergbauliche Entwicklung Kanadas mit besonderer Berücksichtigung der Nickelgewinnung: Zeitschr. prakt. Geologie, Jg. 25, H. 7, pp. 111-116, July, 1917.
2. Prehnit vom Adams Sund, Admiralty Inlet, Baffinsinsel, Franklin: Zeitschr. prakt. Geologie, Jg. 25, H. 8, pp. 139-141, August, 1917.

Simons, F. L. See Fisher, L. W., 1.

Simonds, Frederic William.

1. Memorial of Edwin Theodore Dumble: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 18-29, portr., March 30, 1928.

Simpson, George Gaylord. See also Granger, 1.

1. Mesozoic Mammalia, I; American triconodonts: Am. Jour. Sci., 5th ser., vol. 10, pp. 145-165, 334-358, 21 figs., August and October, 1925; abstract, Geol. Soc. America, Bull., vol. 36, no. 1, p. 229, March 30, 1925.
2. Mesozoic Mammalia, II; *Tinodon* and its allies: Am. Jour. Sci., 5th ser., vol. 10, pp. 451-470, 9 figs., November, 1925.
3. Mesozoic Mammalia, III; Preliminary comparison of Jurassic mammals except multituberculates: Am. Jour. Sci., 5th ser., vol. 10, pp. 559-569, 3 figs., December, 1925.
4. Mesozoic Mammalia, IV; The multituberculates as living animals: Am. Jour. Sci., 5th ser., vol. 11, pp. 228-250, 8 figs., March, 1926.
5. Mesozoic Mammalia, V; *Dromatherium* and *Microconodon*: Am. Jour. Sci., 5th ser., vol. 12, pp. 87-108, 4 figs., August, 1926.
6. Reconnaissance of part of the Santa Fe formation (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 230, March 30, 1925.
7. The age of the Morrison formation: Am. Jour. Sci., 5th ser., vol. 12, pp. 198-216, September, 1926.
8. New reconstruction of *Lasanius* (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 237, March 30, 1926.
9. Pre-Cretaceous evolution of mammalian lower molars (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 238, March 30, 1926.
10. Are *Dromatherium* and *Microconodon* mammals? [from Triassic of North Carolina]: Science, new ser., vol. 63, pp. 548-549, May 28, 1926.
11. The fauna of Quarry 9 [Morrison formation, Como Bluff, Wyoming]: Am. Jour. Sci., 5th ser., vol. 12, pp. 1-11, 1 fig., July, 1926.
12. American terrestrial Rhynchocephalia: Am. Jour. Sci., 5th ser., vol. 12, pp. 12-16, 2 figs., July, 1926.
13. Mammalian fauna of the Hell Creek formation of Montana: Am. Mus. Novitates, no. 267, 7 pp., 6 figs., April 30, 1927.
14. Mammalian fauna and correlation of the Paskapoo formation of Alberta: Am. Mus. Novitates, no. 268, 10 pp., 7 figs., April 30, 1927.

Simpson, George Gaylord—Continued.

15. A North American Oligocene edentate: Carnegie Mus., Annals, vol. 17, no. 2, pp. 283-298, 1 pl., May, 1927.
16. Mesozoic Mammalia, VI; Genera of Morrison pantotheres: Am. Jour. Sci., 5th ser., vol. 13, pp. 409-416, May, 1927.
17. Mesozoic Mammalia, VII; Taxonomy of Morrison multituberculates: Am. Jour. Sci., 5th ser., vol. 14, pp. 36-38, July, 1927.
18. *Tathiodon*, new genus, to replace *Tanaodon* Simpson non Kirk; a correction: Am. Jour. Sci., 5th ser., vol. 14, p. 71, July, 1927.
19. Mesozoic Mammalia, VIII; Genera of Lance mammals other than multituberculates: Am. Jour. Sci., 5th ser., vol. 14, pp. 121-130, August, 1927.
20. Mesozoic Mammalia, IX; The brain of Jurassic mammals: Am. Jour. Sci., 5th ser., vol. 14, pp. 259-268, 4 figs., October, 1927.
21. A new mammalian fauna from the Fort Union of southern Montana: Am. Mus. Novitates, no. 297, 15 pp., 14 figs., February 2, 1928; abstract, Geol. Soc. America, Bull., vol. 39, no. 1, pp. 300-301, March 30, 1928.
22. Mesozoic mammals, X; Some Triassic mammals: Am. Jour. Sci., 5th ser., vol. 15, pp. 154-167, 3 figs., February, 1928.
23. Mesozoic Mammalia, XI; *Brancatherulum tendagurense* Dietrich: Am. Jour. Sci., 5th ser., vol. 15, pp. 303-308, 2 figs., April, 1928.
24. American Eocene didelphids: Am. Mus. Novitates, no. 307, 7 pp., 5 figs., April 14, 1928.
25. Mesozoic Mammalia, XII; The internal mandibular groove of Jurassic mammals: Am. Jour. Sci., 5th ser., vol. 15, pp. 461-470, 7 figs., June, 1928.
26. Pleistocene mammals from a cave in Citrus County, Florida: Am. Mus. Novitates, no. 328, 16 pp., 11 figs., October 26, 1928.
27. (and Elftman, Herbert Oliver.). Hind limb musculature and habits of a Paleocene multituberculate: Am. Mus. Novitates, no. 333, 19 pp., 6 figs., November 1, 1928.

Simpson, Howard Edwin.

1. Artesian-water conditons in North Dakota: North Dakota Geol. Survey, Bull. no. 2, 7 pp., Grand Forks, 1923.
2. The principles of conservation as applied to artesian waters [North Dakota]: North Dakota, Univ., Quart. Jour., vol. 15, no. 4, pp. 287-297, May, 1925.
3. The badlands of the Little Missouri [North Dakota]: North Dakota, Univ., Quart. Jour., vol. 16, no. 2, p. 148, 4 pls., January, 1926.
4. The conservation of artesian water: North Dakota Geol. Survey, Bull. no. 5, 22 pp., 1 fig., 1926.
5. The water supply of Harvey, North Dakota; a method of water prospecting: North Dakota Geol. Survey, Bull. no. 6, pp. 3-8, 1 pl., 1927.
6. The third biennial report of the State water geologist: North Dakota Geol. Survey, Bull. no. 6, pp. 9-16, 1927.

Simpson, Louis.

1. Oil-yielding shales in the province of New Brunswick: Canadian Min. Inst., Monthly Bull., no. 1, pp. 42-47, January, 1919.

Sinclair, Ewart Gladstone, 1884-1927.

1. Oil possibilities of the Black Hills region: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 8, pp. 800-809, August, 1926.

Sinclair, William John.

1. New mounts in the Princeton geological museum (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 223, March 31, 1920.
2. A new *Hoplophœneus* from the *Titanotherium* beds [South Dakota]: Am. Philos. Soc., Proc., vol. 60, no. 2, pp. 96-98, 1 fig., 1921.
3. The "turtle-*Oreodon* layer" or "red layer," a contribution to the stratigraphy of the White River Oligocene (results of the Princeton University 1920 expedition to South Dakota): Am. Philos. Soc., Proc., vol. 60, no. 3, pp. 457-466, 1 pl., 1921.
4. Entelodonts from the Big Badlands of South Dakota in the geological museum of Princeton University: Am. Philos. Soc., Proc., vol. 60, no. 4, pp. 467-495, 22 figs., 1921.
5. The small entelodonts of the White River Oligocene: Am. Philos. Soc., Proc., vol. 61, no. 1, pp. 53-64, 5 figs., 1922.
6. Hyracodons from the Big Badlands of South Dakota: Am. Philos. Soc. Proc., vol. 61, no. 1, pp. 65-79, 8 figs., 1922. Abstract, Geol. Soc. America, Bull., vol. 33, no. 1, pp. 209-210, March 31, 1922; Science, new ser., vol. 55, p. 654, June 16, 1922.
7. Stratigraphy of the lower *Oreodon* beds of the South Dakota Big Badlands (abstract with discussion by W. D. Matthew): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 155-156, March 31, 1922.
8. The faunas of the concretionary zones of the *Oreodon* beds, White River Oligocene: Am. Philos. Soc., Proc., vol. 63, no. 1, pp. 94-133, 10 figs., 1 pl., 1924.
9. The mounted skeleton of a new *Mesohippus* from the *Protoceras* beds: Am. Philos. Soc., Proc., vol. 64, no. 1, pp. 55-63, 1 pl., 1925.
10. (and Jepson, G. L.). The skull of *Eusmilus*: Am. Philos. Soc., Proc., vol. 66, pp. 391-407, 8 figs., 1927.
11. *Omorhamphus*, a new flightless bird from the lower Eocene of Wyoming: Am. Philos. Soc., Proc., vol. 67, no. 1, pp. 51-65, 3 figs., 2 pls., 1928.

Sine, F. L.

1. Antozonite from Monteagle Township, Hastings County, Ontario: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 22-24, 1925.
2. Fetid feldspar from Loughboro Township, Frontenac County, Ontario: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 25-27, 1925.
3. The pegmatite dikes of southeastern Ontario: Canadian Min. Jour., vol. 47, no. 7, pp. 169-171, February 12, no. 10, pp. 237-243, 2 figs., March 5, no. 11, pp. 257-262, 1 fig., March 12, 1926.

Singewald, Joseph T., jr. See also Cushman, 17; Lindgren, 18; Reger, 5.

1. Sand chrome deposits of Maryland (abstract): Geol. Soc. America, Bull., vol. 30, p. 111, March 31, 1919.
2. Maryland sand chrome ore: Econ. Geology, vol. 14, no. 3, pp. 189-197, 5 figs., May, 1919.
3. A genetic comparison of the Michigan and Bolivian copper deposits: Econ. Geology, vol. 23, no. 1, pp. 55-61, January, 1928.
4. Discussion of Wegener theory. In Theory of continental drift, pp. 189-193, Am. Assoc. Petroleum Geologists, 1928.
5. Notes on feldspar, quartz, chrome, and manganese in Maryland: Maryland Geol. Survey, vol. 12, pp. 91-194, 6 figs., 13 pls. (incl. maps), 1928.

Singewald, Quentin Dreyer.

1. Origin and distribution of rock oil: Pan-Am. Geologist, vol. 39, no. 4, pp. 282-288, May, 1923.

Sisler, James Donaldson. See also Pennsylvania T. G. S., 1; Reese, 1.

1. Bituminous-coal losses and mining methods in Pennsylvania, including thickness, character, and reserves of coal: Pennsylvania Geol. Survey, 4th ser. [Bull. M4], 216 pp., 29 figs. [1924].
2. Geology of Pennsylvania bituminous coals: Pennsylvania Geol. Survey, 4th ser., Bull. M6, pt. 4, pp. 2-6, 1925.
3. Bituminous coal fields of Pennsylvania; Part II, Detailed description of coal fields: Pennsylvania, Topog. and Geol. Survey, Bull. M6, pt. 2, 511 pp., 152 figs., 14 pls. (incl. maps), 1926.

Sizer, Frank L.

1. The Divide district [Tonopah, Nevada]: Min. and Sci. Press, vol. 118, pp. 631-633, 4 figs., May 10, 1919.

Skeels, Frank H.

1. A preliminary report on the clays of Idaho: Idaho, Bur. Mines and Geology, Bull. no. 2, 74 pp., 9 figs., 1920.

Skirvin, Orren W.

1. Experimental study of the invasion of oil into a water-wet sand: Econ. Geology, vol. 17, no. 6, pp. 461-469, September, 1922.

Slate, Frederick.

1. Bibliographical memoir of Eugene Woldemar Hilgard, 1833-1916: Nat. Acad. Sci., Biog. Mem., vol. 9, pp. 95-155, portr., November, 1919.

Slater, George.

1. A "new section" in the upper drift deposits of Toronto, 1924: Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 37-46, 5 figs., March 1927.
2. Structure of the Mud Buttes and Tit Hills in Alberta: Geol. Soc. America, Bull., vol. 38, no. 4, pp. 721-730, 6 figs., 2 pls., December 30, 1927; abstract, no. 1, pp. 161-162, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 157, March, no. 3, pp. 223-224, October, 1927; British Assoc. Adv. Sci., Rept. 95th Meeting, pp. 321-322, 1927.
3. Structure of drumlins on southern shore of lake Ontario, New York State, 1924 (abstract): Pan-Am. Geologist, vol. 50, no. 3, p. 232, October, 1928.

Slavik, F.

1. Note on zaratite from Bohemia, Pennsylvania, and Tasmania: Am. Mineralogist, vol. 11, no. 10, pp. 279-280, October, 1926.

Slawson, Chester B.

1. A new method of crystal drawing: Am. Mineralogist, vol. 6, no. 11, pp. 155-158, 3 figs., November, 1921.
2. The thermo-optical properties of heulandite: Am. Mineralogist, vol. 10, no. 9, pp. 305-331, 4 figs., 3 pls., September, 1925.

Slipper, Stanley Eades. See also Dowling, 1.

1. Sketch of the geology of southern and central Alberta: Canada, Geol. Survey, Mem. 116, pp. 11-24, 1919.
2. Sheep River gas and oil field, Alberta: Canada, Geol. Survey, Mem. 122, 46 pp., 4 figs., 8 pls., 3 maps, 1921.

Slocum, Arthur Ware.

1. (and Foerste, August F.). New echinoderms from the Maquoketa beds of Fayette County, Iowa [with description of *Pleurocystites multi-striatus* by E. O. Ulrich and Edwin Kirk]: Iowa Geol. Survey, vol. 29, pp. 315-382, 5 figs., 6 pls. [1924].

Smith, A. F.

1. The mineral resources of the Tennessee River basin in Tennessee, Kentucky, and Virginia: U. S., 70th Cong., 1st sess., H. R. Doc. no. 185, pp. 120-158, 1928.
2. Investigation of possibilities of pig-iron production in east Tennessee: U. S., 70th Cong., 1st sess., H. R. Doc. no. 185, pp. 183-192, 1928.

Smith, Arthur H. De Witt.

1. Mining methods of Verde mining district [Arizona]: Am. Inst. Min. and Met. Eng., Trans. [preprint], no. 1309, 43 pp., 12 figs., March, 1924.

Smith, Edward S. C. See also Perkins, E. H., 3.

1. Geology of the Pawtuckaway Mountains [New Hampshire] (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 128, March 31, 1922.
2. The Rangeley conglomerate [Maine]: Am. Jour. Sci., 5th ser., vol. 5, pp. 147-154, 1 fig., February, 1923.
3. Contributions to the geology of Maine, No. 2; Part II, The igneous rock of Mt. Kineo and vicinity: Am. Jour. Sci., 5th ser., vol. 10, pp. 437-444, 1 fig., November, 1925.
4. A possible tillite from northern Maine: Am. Jour. Sci., 5th ser., vol. 15, pp. 61-65, 1 fig., January, 1928.
5. The Cambrian in northern Maine: Am. Jour. Sci., 5th ser., vol. 15, pp. 484-486, 1 fig., June, 1928.
6. The Cambrian in northern Maine (abstract): Science, new ser., vol. 68, pp. 648-649, December 28, 1928.

Smith, Ernest Rice.

1. The Pleistocene locality at Wailes Bluff [St. Marys County], Maryland, and its molluscan fauna: Michigan Acad. Sci., 22d Ann. Rept., pp. 85-88, 1921.
2. Three new brackish-water Pliocene Mollusca from Louisiana: Indiana Acad. Sci., Proc., 38th Ann. Meeting., 1922, pp. 135-136, 5 figs., 1923.
3. A case of stream piracy near Greencastle, Indiana: Indiana Acad. Sci., Proc., 39th Ann. Meeting, vol. 33, pp. 73-75, 3 figs., 1924.

Smith, Eugene Allen, 1841-1927.

1. Report of progress for the fiscal years 1914-1918: Alabama, Geol. Survey, 14 pp. [1919].
2. A geological map of Alabama: Alabama, Geol. Survey, Bull. 22, frontispiece, 1920.
3. Report of progress for the fiscal years 1918-1922: Alabama, Geol. Survey, 16 pp. [1922].
4. Mineral industries of Alabama: The South's Development, Manufacturers Record, vol. 86, no. 24, pt. 2, pp. 350-354, December 11, 1924. Reprint, 14 pp.
5. (and others). Geologic map of Alabama . . . Scale, 1:500,000. Alabama Geol. Survey, 1926. Accompanies Special report no. 14.
6. Report of progress for the fiscal years 1923-1926: Alabama Geol. Survey, 16 pp., 1926.
7. Recent activities of Alabama Geological Survey: Pan-Am. Geologist, vol. 48, no. 3, pp. 229-234, 2 figs., October, 1927.

Smith, George L.

1. Contributions to the geology of southwestern Iowa: Iowa Acad. Sci., Proc., 1918, vol. 25, pp. 521-537, 1 fig. [1919].

Smith, George Otis.

1. Fortieth annual report of the Director of the United States Geological Survey to the Secretary of the Interior for the fiscal year ended June 30, 1919. 200 pp., 2 pls. (maps), 1 fig., Washington, 1919.
2. (Editor). The strategy of minerals . . . 372 pp. 17 figs., New York, D. Appleton & Company, 1919.
3. Economic limits to domestic independence in minerals (abstract, with discussion by G. F. Loughlin and F. E. Wright): Geol. Soc. America, Bull., vol. 30, pp. 98-99, March 31, 1919.
4. Military contribution of civilian engineers: Geol. Soc. America, Bull., vol. 30, no. 3, pp. 399-404, September 30, 1919; abstract, no. 1, p. 79, March 31, 1919.
5. Geological Survey reports: Eng. and Min. Jour., vol. 108, p. 740, November 1, 1919.
6. Forty-first annual report of the Director of the United States Geological Survey to the Secretary of the Interior for the fiscal year ended June 30, 1920. 180 pp., 3 pls. (maps), Washington, 1920.
7. The public service opportunity of the oil geologist: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 1, pp. 5-15, 1920.
8. Our industry's part: Am. Mining Congress, Rept. of the Proceedings of the Twenty-Second Annual Convention [vol. 23], pp. 317-325 [1920].
9. Forty-second annual report of the Director of the United States Geological Survey to the Secretary of the Interior, for the fiscal year ended June 30, 1921. 108 pp., 1 pl. (map), Washington, 1921.
10. Scientific by-products of applied geology: Eng. and Min. Jour., vol. 111, no. 2, pp. 66-67, January 8, 1921; Washington Acad. Sci., Jour., vol. 11, no. 9, pp. 203-207, May 4, 1921.
11. Geology in partnership with American industry: Franklin Inst., Jour., vol. 192, no. 5, pp. 623-635, November, 1921.
12. War problems in minerals, V; United States Geological Survey, 1914-1918: Eng. and Min. Jour., vol. 112, no. 23, pp. 892-894, December 3, 1921.
13. Forty-third annual report of the Director of the United States Geological Survey to the Secretary of the Interior, for the fiscal year ended June 30, 1922. 80 pp., 1 pl. (map), Washington, 1922.
14. Plain geology: Econ. Geology, vol. 17, no. 1, pp. 34-39, January-February, 1922.
15. The occurrence of granite in Maine: U. S. Geol. Survey, Bull. 738, pp. 205-209, 1 pl. (map), 1923.
16. Forty-fourth annual report of the Director of the United States Geological Survey to the Secretary of the Interior for the fiscal year ended June 30, 1923. 89 pp., 1 pl. (map), Washington, 1923.
17. Forty-fifth annual report of the Director of the United States Geological Survey to the Secretary of the Interior for the fiscal year ended June 30, 1924. 83 pp., 1 pl. (map), Washington, 1924.
18. Alfred Hulse Brooks: Science, new ser., vol. 61, pp. 80-81, January 23, 1925.
19. Alfred Hulse Brooks: Mining and Metallurgy, vol. 6, no. 218, pp. 98-99, February, 1925.
20. Topographic and geologic maps: Military Engineer, vol. 17, no. 95, pp. 381-395, 19 figs., 8 pls., September-October, 1925.

Smith, George Otis—Continued.

21. Forty-sixth annual report of the Director of the Geological Survey to the Secretary of the Interior for the fiscal year ended June 30, 1925. 91 pp., 1 pl. (map), Washington, 1925.
22. Forty-seventh annual report of the Director of the Geological Survey to the Secretary of the Interior for the fiscal year ended June 30, 1926. 96 pp., Washington, 1926.
23. Forty-eighth annual report of the Director of the Geological Survey to the Secretary of the Interior for the fiscal year ended June 30, 1927. 77 pp., Washington, United States Government Printing Office, 1927.
24. Geology at work: Johns Hopkins Univ., Studies in Geology, no. 8, pp. 25-32, 1927.
25. Charles Doolittle Walcott: Am. Jour. Sci., 5th ser., vol. 14, pp. 1-6, portr., July, 1927.
26. Charles D. Walcott and the United States Geological Survey: Smithsonian Misc. Coll., vol. 80, no. 12, pp. 17-18, May 12, 1928.
27. Federal surveys and maps: Am. Year Book, 1927, pp. 156-158, 1928.
28. Forty-ninth annual report of the Director of the Geological Survey to the Secretary of the Interior, 1928. 77 pp., Washington, United States Government Printing Office, 1928.
29. Charles Doolittle Walcott: Smithsonian Inst., Ann. Rept., 1927, pp. 555-561, 2 pls. (portr.), 1928.
30. Joseph Silas Diller—an appreciation: Eng. and Min. Jour., vol. 126, no. 23, p. 913, December 8, 1928.

Smith, Isabel F.

1. A columbite crystal from Boothwyn, Pennsylvania: Am. Mineralogist, vol. 4, no. 10, pp. 121-123, 1 pl., October, 1919.
2. Genesis of anorthosites of Piedmont Pennsylvania: Pan-Am. Geologist, vol. 38, no. 1, pp. 29-50, 3 figs., 1 pl., August, 1922.
3. Anorthosite in the Piedmont province of Pennsylvania. Dissertation, Bryn Mawr College, 40 pp., 5 figs., Bryn Mawr., Pennsylvania, 1923.

Smith, James Perrin.

1. Climatic relations of the Tertiary and Quaternary faunas of the California region: California Acad. Sci., Proc., 4th ser., vol. 9, no. 4, pp. 123-173, 1 pl., July 12, 1919.
2. John Casper Branner: Jour. Geology, vol. 32, no. 3, pp. 240-241, April-May, 1924.
3. Upper Triassic marine invertebrate faunas of North America: U. S. Geol. Survey, Prof. Paper 141, 262 pp., 121 pls., 1927.

Smith, John Eliphalet.

1. Deposits of volcanic ash (abstract): Elisha Mitchell Sci. Soc., Jour., vol. 35, no. 1-2, pp. 7-8, October, 1919.
2. Agricultural geology: Science, new ser., vol. 52, pp. 139-142, August 13, 1920; Iowa Acad. Sci., Proc., vol. 27, pp. 175-179 [1922].
3. Eolian deposits in Webster County, Iowa (abstract): Science, new ser., vol. 54, p. 307, September 30, 1921.
4. Three glacial tills at Ames, Iowa (abstract): Science, new ser., vol. 54, p. 307, September 30, 1921; Iowa Acad. Sci., Proc. 1921, vol. 28, pp. 47-48, 1 fig. [1923].
5. A field of eskers in central Iowa (abstract): Iowa Acad. Sci., Proc., vol. 27, p. 180 [1922].

Smith, John Eliphalet—Continued.

6. Geology in rural welfare: *Pan-Am. Geologist*, vol. 38, no. 4, pp. 283-288, November, 1922.
7. Algona recessional stages of Wisconsin glaciation in Iowa (abstract): *Pan-Am. Geologist*, vol. 42, no. 5, p. 376, December, 1924; *Iowa Acad. Sci., Proc.*, vol. 31, p. 339 [1926?].
8. Fort Dodge stages of retreating glaciers (abstract): *Pan-Am. Geologist*, vol. 42, no. 5, pp. 376-377, December, 1924; *Iowa Acad. Sci., Proc.*, vol. 31, p. 335 [1926?].
9. Theoretical stage in retreat of Iowa glaciers (abstract): *Pan-Am. Geologist*, vol. 42, no. 5, p. 377, December, 1924; *Iowa Acad. Sci., Proc.*, vol. 31, p. 335 [1926?].
10. Preliminary State map of Wisconsin glacial till [in Iowa] (abstract): *Pan-Am. Geologist*, vol. 42, no. 5, p. 377, December, 1924.
11. The fertilizer materials of Iowa: *Iowa Geol. Survey*, vol. 31, pp. 91-151, 13 figs., 7 pls., (incl. maps) [1926?].
12. The Algona recessional stages of the Wisconsin glaciation in Iowa (abstract): *Iowa Acad. Sci., Proc.*, vol. 31, pp. 335-337, 1 fig. [1926?].
13. A preliminary map of the Wisconsin till in Iowa (abstract): *Iowa Acad. Sci., Proc.*, vol. 31, pp. 337-338 [1926?].
14. The Humboldt stages of the Wisconsin glaciation in Iowa (abstract): *Iowa Acad. Sci., Proc.*, vol. 31, pp. 338-339 [1926?].
15. Molding sand in eastern Iowa (abstract): *Iowa Acad. Sci., Proc.*, 1925, vol. 32, pp. 357-358 [1926].
16. Glacial geology of Story County (abstract): *Iowa Acad. Sci., Proc.*, 1925, vol. 32, pp. 358-359 [1926].
17. Recessional moraines in central Iowa (abstract): *Pan-Am. Geologist*, vol. 48, no. 2, p. 155, September, 1927.

Smith, Louis H.

1. Diffusion in ore genesis: *Econ. Geology*, vol. 23, no. 8, pp. 928-929, December, 1928.

Smith, Philip Sidney.

1. Sulphur and pyrites in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 2, pp. 357-377, 3 figs., December 11, 1919.
2. Sulphur and pyrites in 1919: *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 2, pp. 535-546, April 29, 1922.
3. Sulphur, pyrites, and sulphuric acid in 1920: *U. S. Geol. Survey, Mineral Resources*, 1920, pt. 2, pp. 301-308, June 16, 1922.
4. Notes on activities of the Geological Survey of United States of America: *Pan-Pacific Sci. Cong., Australia, 1923, Proc.*, vol. 2, pp. 1296-1303 [1924].
5. Alfred Hulse Brooks: *Assoc. Am. Geographers, Annals*, vol. 15, no. 4, pp. 159-161, December, 1925.
6. Mineral industry of Alaska in 1924 and administrative report: *U. S. Geol. Survey, Bull.* 783, pp. 1-39, 1926.
7. (and Mertie, J. B., jr., and Foran, W. T.). Summary of recent surveys in northern Alaska: *U. S. Geol. Survey, Bull.* 783, pp. 151-166, 1 fig., 1 pl. (map), 1926.
8. Fields for future Alaskan studies (abstract): *Washington Acad. Sci., Jour.*, vol. 16, no. 3, p. 79, February 4, 1926.

Smith, Philip Sidney—Continued.

9. Memorial of Alfred Hulse Brooks: Geol. Soc. America, Bull., vol. 37, no. 1, pp. 15–48, 1 pl. (portr.), March 30, 1926.
10. Oil developments in Alaska: Am. Inst. Min. and Met. Eng., no. 1570 (Petroleum development and technology in 1925), pp. 653–656, April, 1926; abstract, Mining and Metallurgy, vol. 7, no. 232, p. 177, April, 1926.
11. Geologic investigations in northern Alaska: U. S. Geol. Survey, Bull. 792, pp. 111–120, 1 pl. (map), 1927.
12. Mineral industry of Alaska in 1926 and administrative report: U. S. Geol. Survey, Bull. 797, pp. 1–66, 1927.
13. Some post-Tertiary changes in Alaska of climatic significance: Nat. Research Council, Bull. no. 61, pp. 35–39, 1 fig., July, 1927.

Smith, Richard A. See also Stone, 11.

1. Mineral resources of Michigan . . . : Michigan, Geol. Survey, Pub. 32 (Geol. ser. 26), 145 pp. [1922].
2. (and Martin, Helen M.). Mineral resources of Michigan . . . : Michigan, Dept. Conservation, Geol. Survey Div., 138 pp. [1923?].
3. Oil development in Michigan and the anticline at Seul Choix Point: Michigan Acad. Sci., Papers, vol. 1, pp. 269–272, 1923.
4. Mineral resources of Michigan with statistical tables of production and value for 1922 and prior years: Michigan Geol. Survey, Pub. 34 (geol. ser. 28), 146 pp. [1924].
5. Mineral resources of Michigan, with statistical tables of production and value of mineral products for 1923 and prior years: Michigan, Geol. Survey, Pub. 35 (Geol. ser. 29), 115 pp. [n. d., 1925;].

Smith, Richard W.

1. Mining and washing phosphate rock in Tennessee: Eng. and Min. Jour.-Press, vol. 115, no. 5, pp. 221–236, 8 figs., February 3, 1923.
2. Geology and utilization of Tennessee phosphate rock: Am. Inst. Min. and Met. Eng., Trans., vol. 74, pp. 127–146, 5 figs., 1926; [pre-print] no. 1373, September, 1924.

Smith, Stanley.

1. Memorial of Sir John Burchmore Harrison: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 45–52, portr., March 30, 1927.

Smith, Walter R.

1. (and Baker, A. A.). The Cold Bay-Chignik district, Alaska: U. S. Geol. Survey, Bull. 755, pp. 151–218, 1 fig., 5 pls. (maps), 1924.
2. Aniakchak Crater, Alaska Peninsula: U. S. Geol. Survey, Prof. Paper 132, pp. 139–145, 1 fig., 4 pls., May 15, 1925.
3. The Cold Bay-Katmai district [Alaska]: U. S. Geol. Survey, Bull. 773, pp. 183–207, map, 1925.
4. Geology and oil development of the Cold Bay district: U. S. Geol. Survey, Bull. 783, pp. 63–88, 1 fig., 1 pl. (map), 1926.

Smith, Warren Du Pré. See also Macelwane, 9; Schenck, 1; Takahashi, 1.

1. (and Packard, Earl L.). The salient features of the geology of Oregon: Jour. Geology, vol. 27, no. 2, pp. 79–120, 3 figs., 1 pl., 1919. Oregon, Univ., Bull, vol 16, no 7, pp. 79–120, 3 figs., 1 pl., July, 1919.
2. Rock classification for engineering: Econ. Geology, vol. 14, no. 2, pp. 180–183, March–April, 1919.

Smith, Walter Du Pré—Continued.

3. Geology as a synthetic science (abstract) : Geol. Soc. America, Bull., vol. 30, pp. 77-78, March 31, 1919.
4. War work by the department of geology at the University of Oregon (abstract) : Geol. Soc. America, Bull., vol. 30, p. 83, March 31, 1919.
5. Earthquakes in Oregon : Seismol. Soc. America, Bull., vol. 9, no. 3, pp. 59-71, 2 figs., September, 1919. Also issued as Oregon, Univ., Pub., vol. 1, no. 3, February, 1920.
6. Physical and economic geography of Oregon (abstract) : Geol. Soc. America, Bull., vol. 32, no. 1, p. 146, March 31, 1921.
7. Geology and our civilization : Sci. Monthly, vol. 18, no. 2, pp. 168-180, February, 1924.
8. Petroleum possibilities of western Oregon : Econ. Geology, vol. 19, no. 5, pp. 455-465, August, 1924.
9. Physical and economic geography of Oregon : Oregon, Univ., Commonwealth Review, new ser., vol. 6, nos. 2 and 3, pp. 21-31, April-July, no. 4, pp. 56-89, 6 figs. (incl. map), 4 pls., December, 1924.
10. Geology of Steens and Pueblo Mountains, southeastern Oregon (abstract) : Geol. Soc. America, Bull., vol. 36, no. 1, p. 202, March 30, 1925.
11. Physical and economic geography of Oregon; the Willamette Valley : Oregon, Univ., Commonwealth Review, vol. 7, no. 4, pp. 137-195, 10 figs., 2 pls., October, 1925.
12. Physical and economic geology of Oregon; the southeastern lake province : Oregon, Univ., Commonwealth Review, vol. 8, nos. 2-3, pp. 199-253, 5 figs., 2 pls., April-July, 1926.
13. Physical and economic geography of Oregon; the Coast Range province : Oregon, Univ., Commonwealth Review, vol. 8, nos. 2-3, pp. 254-297, 15 figs., 3 pls., April-July, 1926.
14. Contribution to the geology of southeastern Oregon (Steens and Pueblo Mountains) : Jour. Geology, vol. 35, no. 5, pp. 421-440, 10 figs., July-August, 1927.
15. Geological suite from eastern Oregon (abstract) : Geol. Soc. America, Bull., vol. 39, no. 1, pp. 168-169, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 1, pp. 76-77, February, 1928.
16. Owyhee project of Oregon (abstract) : Pan-Am. Geologist, vol. 49, no. 4, p. 306, May, 1928.
17. Diatomaceous deposits of eastern Oregon (abstract) : Pan-Am. Geologist, vol. 49, no. 4, p. 306, May, 1928.
18. Features of Wallowa Mountains, Oregon (abstract) : Pan-Am. Geologist, vol. 49, no. 4, p. 314, May, 1928.

Smith, William Sydney Tangier.

1. Jasperoid of the Joplin district, Missouri, Kansas, and Oklahoma (abstract) : Geol. Soc. America, Bull., vol. 33, no. 1, pp. 147-148, March 31, 1922.
2. The determination of dip and strike : Econ. Geology, vol. 17, no. 3, pp. 207-213, 5 figs., May, 1922.
3. An apparent-dip protractor : Econ. Geology, vol. 20, no. 2, pp. 181-184, 1 fig., March-April, 1925; abstract, Geol. Soc. America, Bull., vol. 36, no. 1, p. 206, March 30, 1925.

Smitheringale, W. V.

1. Antimony; an outline of the geology of the world's antimony deposits and a proposed classification; with notes on the properties and uses of antimony and its compounds: *Canadian Min. and Met. Bull.*, no. 180, pp. 414-468, April, 1927.
2. Mineral association at the George gold-copper mine, Stewart, British Columbia: *Econ. Geology*, vol. 23, no. 2, pp. 193-208, 2 figs., March-April, 1928.

Smithsonian Institution.

1. Explorations and field work of the Smithsonian Institution in 1918: *Smithsonian Misc. Coll.*, vol. 70, no. 2, 122 pp. [geological and paleontological, pp. 3-27], 127 figs., 1919; in 1919, vol. 72, no. 1, 80 pp., 77 figs., 1920; in 1920, vol. 72, no. 6, 126 pp., 138 figs., 1921; in 1921, vol. 72, no. 15, 128 pp., 132 figs., 1922; in 1922, vol. 74, no. 5, 153 pp., 145 figs., 1923; in 1923, vol. 76, no. 10, 128 pp., 123 figs., 1924; in 1924, vol. 77, no. 2, 136 pp., 138 figs., 1925; in 1925, vol. 78, no. 1, 132 pp., 128 figs., 1926; in 1926, vol. 78, no. 7, 259 pp., 247 figs., 1927.

Smyth, Charles Henry, jr. See also Clarke, J. M., 15.

1. On the genetic significance of ferrous silicate associated with the Clinton iron ores: *New York State Mus. Bull.*, nos. 207-209, pp. 175-198, 6 pls., 1919.
2. (and Buddington, A. F.). Geology of the Lake Bonaparte quadrangle: *New York State Mus. Bull.*, no. 269, 106 pp., 24 pls., map, 1926.
3. The genesis of alkaline rocks: *Am. Philos. Soc., Proc.*, vol. 66, pp. 535-580, 1927.

Smythe, D. D.

1. Arsenopyrite twins from New Mexico: *Am. Mineralogist*, vol. 6, no. 5, pp. 85-86, 1 fig., May, 1921.
2. A contact-metamorphic iron-ore deposit near Fairview, New Mexico: *Econ. Geology*, vol. 16, no. 6, pp. 410-418, 2 pls., 1 fig., September-October, 1921.

Snelgrove, A. K.

1. Mineral exploration in Newfoundland during the decade 1917-1927: *Canadian Inst. Min. and Met., Trans.*, vol. 30, pp. 302-326, 13 figs., map [1928]; *Second (Triennial) Empire Min. and Met. Congress. Canada, 1927, Proc.*, pt. 1, pp. 695-719, 13 figs., 1928.
2. The geology of the central mineral belt of Newfoundland: *Canadian Min. and Met. Bull.*, no. 197, pp. 1057-1127, 8 figs., 2 pls. (maps), September, 1928.

Snider, L. B. See Moore, H., 1.

Snider, Luther Crocker. See also Stone, 11.

1. Oil and gas in the Mid-Continent fields. 393 pp., 97 figs. (incl. maps), Oklahoma City, Okla., Harlow Publishing Co., 1920.
2. A suggested explanation for the surface subsidence in the Goose Creek oil and gas field, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 7, pp. 729-745, July, 1927.

Snow, D. R.

1. (and Dean, David). Rainbow Bend field, Cowley County, Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 6, pp. 974-982, 2 figs., September, 1925.

Snow, F. W. See Browning, 1.

Snowden Piggot, Charles.

1. Radium and geology: Am. Chem. Soc., Jour., vol. 50, no. 11, pp. 2910-2916, November, 1928.

Snyder, J. P. See Johnson, J. H., 3.

Sohon, F. W.

1. A graphical determination of the actual amplitude of the earth's motion from seismographical data: Seismol. Soc. America, Bull., vol. 14, no. 3, pp. 185-196, 5 figs., September, 1924.

Soley, John Codman.

1. Sources of volcanic energy. 247 pp., illus., New York, G. P. Putnam's Sons, 1924.

Somers, Ransome Evarts. See also Leighton, H., 1, 3; Ries, 3, 5.

1. Microscopic examination of clays: Washington Acad. Sci., Jour., vol. 9, no. 5, pp. 113-126, March 4, 1919.
2. Origin, migration, and accumulation of petroleum: Eng. and Min. Jour.-Press, vol. 115, no. 2, pp. 66-69, 5 figs., January 13, 1923.
3. Petrographic criteria of structure in the Cromwell oil field, Oklahoma: Econ. Geology, vol. 23, no. 3, pp. 317-322, May, 1928.

Sommermeier, Leopold.

1. Ueber einen Fossilfund aus der Unteren Kreide von Trinidad [*Didymotis trinidadensis*, Lower Cretaceous]: Centralbl. Mineralogie, 1918, no. 7-8, pp. 131-136, 2 figs., April, 1918.

Sonder, Richard A. See Friedlaender, 7.

Soper, Edgar Kirke. See also Grout, 1, 2; Varley, 1.

1. The peat deposits of Minnesota: Minnesota Geol. Survey, Bull. no. 16, 261 pp., 21 pls. (incl. maps), 10 figs., 1919.
2. (and Osbon, C. C.). The occurrence and uses of peat in the United States: U. S. Geol. Survey, Bull. 728, 207 pp., 32 figs., 18 pls., 1922.

Sorenson, Robert E.

1. The geology and ore deposits of the South Mountain mining district, Owyhee County, Idaho: Idaho, Bur. Mines and Geology, Pam. no. 22, 47 pp., 5 pls. (incl. maps), May, 1927. (Mimeographed.)

Sosman, Robert Browning. See also Am. Geophysical Union, 1; Bowie, 24; Hewett, 11.

1. The temperature inversions in the fumaroles of the Valley of Ten Thousand Smokes, Alaska Peninsula (abstract): Washington Acad. Sci., Jour., vol. 9, no. 10, pp. 292-293, May 19, 1919.
2. Note on volcanic explosions (abstract): Washington Acad. Sci., Jour., vol. 9, no. 10, pp. 296-297, May 19, 1919.
3. [Report of investigations of the] Geophysical laboratory: Carnegie Inst. Washington, Year Book no. 18, 1919, pp. 153-174, March, 1920.
4. An outline of geophysical-chemical problems: Nat. Acad. Sci., Proc., vol. 6, no. 10, pp. 592-601, October 15, 1920. Nat. Research Council, Reprint and Circular ser., no. 11, pp. 592-601, 1920.
5. An outline of geophysical-chemical problems: Smithsonian Inst., Ann. Rept., 1921, pp. 225-234, 1922.
6. Status and problems of geophysical chemistry: Nat. Research Council, Bull., vol. 7, pt. 5, no. 41, pp. 74-77, January, 1924.

Sosman, Robert Browning—Continued.

7. Symposium on hot springs (abstract) : Nat. Research Council, Bull., vol. 7, pt. 5, no. 41, pp. 149–150, January, 1924.
8. Notes on the papers presented in the symposium on hot springs; General summary of the symposium on hot springs: Jour. Geology, vol. 32, no. 6, pp. 464–471, August–September, 1924.
9. Section of volcanology, summary of reports of committees: Nat. Research Council, Bull., vol. 10, pt. 3, no. 53, p. 80, July, 1925.
10. (and Posnjak, E.). Ferromagnetic ferric oxide, artificial and natural: Washington Acad. Sci., Jour., vol. 15, no. 14, pp. 329–342, 3 figs., August 19, 1925.
11. Scientific papers and discussions at the 1925 meeting of the section of volcanology, American Geophysical Union: Washington Acad. Sci., Jour., vol. 15, no. 18, pp. 413–425, November 4, 1925.
12. Oxygen and volcanism (abstract with discussion) : Washington Acad. Sci., Jour., vol. 15, no. 18, pp. 422–423, November 4, 1925; Bull. volcanologique, 2^e ann., nos. 5–6, pp. 334–335, 1925.
13. Seismic waves and what we learn from them as to the interior of the earth: Nat. Research Council, Bull., vol. 11, pt. 2, no. 56, pp. 26–28, November, 1926; abstract, Am. Jour. Sci., 5th ser., vol. 12, pp. 271–272, September, 1926.

Soyster, Hale B.

1. (and Taylor, Thos. G.). Oil and gas in Oklahoma; oil and gas geology of Muskogee County: Oklahoma Geol. Survey, Bull. no. 40–FF, 28 pp., 3 figs., 4 pls. (incl. map), September, 1928.

Spath, L. F.

1. Eotriassic ammonites from east Greenland: Geol. Mag., vol. 64, pp. 474–475, October, 1927.

Spearman, Charles.

1. The graphite industry: Canadian Min. Jour., vol. 40, pp. 87–88, February 12, 1919.
2. Gold in an altered basic dike [Dubuisson Township, northwestern Quebec]: Canadian Min. Jour., vol. 45, no. 4, p. 87, January 25, 1924.
3. The significance of the middle Eozoic sediments of Ontario and Quebec: Canadian Min. Jour., vol. 45, no. 8, pp. 169–170, February 22, 1924.
4. The Kirkland Lake ore bodies [Ontario]: Canadian Min. Jour., vol. 45, nos. 28 and 29, pp. 668–669, 694–695, 7 figs., July 11 and 18, 1924.
5. Variable velocity hypothesis; and earth's physiognomy: Pan-Am. Geologist, vol. 47, no. 4, pp. 241–254, May, 1927.

Speckman, W. N.

1. Marengo Cave, Marengo, Indiana: Illinois State Acad. Sci., Trans., vol. 16, pp. 393–395, 2 pls., 1923.
2. Lake Abram, Berea, Ohio: Illinois State Acad. Sci., Trans., vol. 16, pp. 396–398, 1923.

Spence, Hugh Swaine.

1. Graphite: Canada, Dept. Mines, Mines Branch, 202 pp., 56 pls., 43 figs., 6 maps, 1920.
2. Phosphate in Canada: Canada, Mines Branch, 156 pp., 12 figs., 32 pls., maps, 1920.
3. The origin of graphite (discussion): Econ. Geology, vol. 16, no. 8, pp. 561–563, December, 1921.

Spence, Hugh Swaine—Continued.

4. Barium and strontium in Canada: Canada, Mines Branch, 100 pp., 18 figs., 15 pls., 1922.
5. Talc and soapstone in Canada: Canada, Dept. Mines, Mines Branch, 85 pp., 15 figs., 2 pls., map, 1922.
6. Le graphite au Canada: Soc. géographie Québec, Bull., vol. 16, no. 1, pp. 17-28, 5 figs., January-February, 1922.
7. Investigation of miscellaneous nonmetallic minerals: Canada, Mines Branch, Summ. Rept., 1921, pp. 12-18, 1923.
8. Bentonite; Feldspar: Canada, Mines Branch, Investigations of Mineral Resources and the Mining Industry, 1923, pp. 1-3, 1924.
9. An addition to the mineral resources of western Canada: bentonite or colloidal clay: Inst. Petroleum Technologists, Jour., vol. 10, no. 45, pp. 707-709, September, 1924.
10. Canada's barytes resources: Canadian Min. Jour., vol. 45, no. 46, pp. 1116-1118, 2 figs., November 14, 1924.

Spencer, Arthur Coe. See also Bateman, 10; Stose, 21.

1. Metasomatism and linear "force of growing crystals" (discussion): Econ. Geology, vol. 21, no. 5, pp. 504-507, August, 1926.

Spencer, Joseph William Winthrop.

1. Preglacial slope and crest of the Niagara escarpment: Geol. Soc. America, Bull., vol. 32, no. 1, pp. 54-56, 3 figs., March 31, 1921.

Spencer, Leonard James.

1. Mineralogical characters of turite (=turgite) and some other iron ores from Nova Scotia: Mineralogical Mag., vol. 18, pp. 339-348, 4 figs., May, 1919.

Spieker, Edmund Maute.

1. The petroleum geology of a part of the western Peace River district, British Columbia: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 2, pp. 112-138, 1 fig., March-April, 1922.
2. Geology of the coal fields [of Utah]: U. S., Bur. Mines, Tech. Paper 345, pp. 13-22, 1 fig., 1925.
3. (and Reeside, John B., jr.). Cretaceous and Tertiary formations of the Wasatch Plateau, Utah (with discussion by Charles Schuchert): Geol. Soc. America, Bull., vol. 36, no. 3, pp. 435-454, 3 figs., September 30, 1925: abstract, no. 1, pp. 150-151, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 149, March, 1925.
4. Post-Cretaceous orogeny in central Utah (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 166, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 165, March, 1926.
5. (and Reeside, John B., jr.). Upper Cretaceous shore line in Utah: Geol. Soc. America, Bull., vol. 37, no. 3, pp. 429-438, 3 figs., September 30, 1926; abstract, no. 1, p. 160, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 161, March, 1926.
6. (and Baker, Arthur A.). Geology and coal resources of the Salina Canyon district, Sevier County, Utah: U. S. Geol. Survey, Bull. 796, pp. 125-170, 2 figs. (maps), 4 pls. (incl. map), January 18, 1928.

Spier, Leslie.

1. Concerning man's antiquity at Frederick, Oklahoma: Science, new ser., vol. 67, pp. 160-161, February 10, 1928.
2. A note on reputed ancient artifacts from Frederick, Oklahoma: Science, new ser., vol. 68, p. 184, August 24, 1928.

Spock, L. E., jr.

1. Geological reconnaissance of parts of Grand, Jackson, and Larimer counties, Colorado: New York Acad. Sci., Annals, vol. 30, pp. 177-261, 46 figs., 1 pl. (map), October 22, 1928.

Spooner, W. C. See also Hull, 5.

1. The Monroe gas field; geology: Louisiana, Dept. Conservation, Bull. no. 12, pp. 4-6, 1 pl. [1926].
2. Interior salt domes of Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 3, pp. 217-292, 25 figs., 1 pl., March, 1926; Geology of salt dome oil fields, pp. 269-344, 25 figs., 1 pl., 1926.
3. Geology of Gulf Coastal Plain of Arkansas and Louisiana (abstract): Pan-Am. Geologist, vol. 49, no. 3, pp. 238-239, April, 1928; Geol. Soc. America, Bull., vol. 39, no. 1, pp. 274-275, March 30, 1928.
4. Rainbow City field, Union County, Arkansas: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 7, pp. 763-764, July, 1928.
5. Production in East Carroll Parish, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 7, p. 765, July, 1928.

Spoor, H. C., jr.

1. Current oil field operations in Illinois: Illinois State Geol. Survey, Press Bull. Ser., Illinois Petroleum, no. 5, pp. 18-24, October 16, 1926.

Springer, Frank, 1848-1927.

1. New species of crinoid [*Eucheirocrinus ontario*]: Canada, Geol. Survey, Mem. 111, p. 127, 1 fig., 1919.
2. The Crinoidea Flexibilia. 486 pp., 51 figs., and atlas of 79 pls., The Smithsonian Institution, 1920.
3. The fossil crinoid genus *Dolatocrinus* and its allies: U. S. Nat. Mus., Bull. 115, 78 pp., 6 figs., 16 pls., 1921.
4. New species of Devonian Crinoidea from northern Canada: Canada, Geol. Survey, Bull. no. 33, pp. 15-18, 1 pl., September 14, 1921.
5. Crinoids from the upper Cretaceous of Tamaulipas, Mexico: U. S. Nat. Mus., Proc., vol. 61, art. 5, pp. 1-4, 1 pl., 1922.
6. *Balanocrinus* in America: Pan-Am. Geologist, vol. 38, no. 3, pp. 262-263, October, 1922.
7. On the fossil crinoid family Catillocrinidae: Smithsonian Misc. Coll., vol. 76, no. 3, 41 pp., 5 pls., August 3, 1923.
8. A Tertiary crinoid from the West Indies: U. S. Nat. Mus., Proc., vol. 65, art. 3, 8 pp., 1 pl., 1924.
9. A remarkable fossil echinoderm fauna in the East Indies: Am Jour. Sci., 5th ser., vol. 8, pp. 325-335, October, 1924.
Includes notes on the distribution of Crinoidea in America.
10. Occurrence of the crinoid genus *Apiocrinus* in America: U. S. Nat. Mus., Proc., vol. 67, art. 18, 5 pp., 1 pl., April 8, 1925.
11. The genus *Pentacrinus* in Alaska: U. S. Nat. Mus., Proc., vol. 67, art. 5, 7 pp., 1 pl., May 22, 1925.
12. American Silurian crinoids: Smithsonian Inst., 239 pp., 33 pls., 1926.
13. Unusual forms of fossil crinoids: U. S. Nat. Mus., Proc., vol. 67, art. 9, 137 pp., 26 pls., February 15, 1926.
14. Upper Devonian crinoids from Mackenzie River valley: Canada, Geol. Survey, Bull. no. 42, pp. 127-132, 1 pl., May 8, 1926.

Spurr, Josiah Edward. See also Anderson, J. C., 2; Bateman, 10, 13; Emmons, W. H., 6; Gray, J. P., 1; Howe, E., 1; Hulin, 3; Lindgren, 18; Engineering and Mining Journal-Press.

1. Commercial control of the mineral resources of the world (abstract): Geol. Soc. America, Bull., vol. 30, pp. 108-109, March 31, 1919.
2. (Editor). Political and commercial geology and the world's mineral resources. 562 pp., 23 figs. New York, McGraw-Hill Book Company, 1920.
3. The copper ores of Lake Superior: Eng. and Min. Jour., vol. 110, no. 8, pp. 355-357, 1 fig., August 21, 1920.
4. Origin of desert ranges of Mexico: Pan-Am. Geologist, vol. 37, no. 1, p. 79, February, 1922.
5. The zonal theory of ore deposition: Eng. and Min. Jour.-Press, vol. 113, no. 12, p. 489, March 25, 1922.
6. The ore magmas; a series of essays on ore deposition. 2 vols., 915 pp., 175 figs., New York, McGraw-Hill Book Company, 1923.
7. The filling of fissure veins: Eng. and Min. Jour.-Press, vol. 116, no. 8, pp. 329-330, 2 figs., August 25, 1923.
8. The gold ores of Porcupine [Ontario]: Eng. and Min. Jour.-Press, vol. 116, no. 15, pp. 633-638, 6 figs., October 13, 1923.
9. The pre-Cambrian veins of Kirkland Lake, Ontario: Eng. and Min. Jour.-Press, vol. 116, no. 16, pp. 671-672, 1 fig., October 20, 1923.
10. The origin of metallic concentrations by magmation: Econ. Geology, vol. 18, no. 7, pp. 617-638, October-November, 1923.
11. The content of metals in intrusive magmas: Econ. Geology, vol. 19, no. 1, pp. 89-92, January-February, 1924.
12. Upper Mississippi lead and zinc ores: Eng. and Min. Jour.-Press, vol. 117, nos. 6 and 7, pp. 246-250, 287-292, 16 figs., February 9 and 16, 1924.
13. Ore injection at Edwards, New York: Eng. and Min. Jour.-Press, vol. 117, no. 17, pp. 684-689, 7 figs., April 26, 1924.
14. Ore deposition at the Creighton nickel mine, Sudbury, Ontario: Econ. Geology, vol. 19, no. 3, pp. 275-280, 1 fig., April-May, 1924.
15. Ore magmas (abstract): Canadian Min. Jour., vol. 45, no. 45, p. 1099, November 7, 1924.
16. Alfred Hulse Brooks: Eng. and Min. Jour.-Press, vol. 118, no. 22, p. 871, portr., November 29, 1924.
17. (and Lewis, J. Volney). Ore deposition at Franklin Furnace, New Jersey: Eng. and Min. Jour.-Press, vol. 119, no. 8, pp. 317-328, 21 figs., February 21, 1925.
18. The Camp Bird [Colorado] compound veindike: Econ. Geology, vol. 20, no. 2, pp. 115-152, 10 figs., March-April, 1925; Eng. and Min. Jour.-Press, vol. 119, no. 13, pp. 517-529, 12 figs., March 28, 1925.
19. Ore magmas versus magmatic waters: Eng. and Min. Jour.-Press, vol. 119, no. 22, p. 890, May 30, 1925.
20. Basic dike injections in magmatic vein sequences (with discussion by J. F. Kemp): Geol. Soc. America, Bull., vol. 36, no. 3, pp. 545-582, 4 figs., September 30, 1925; abstract, no. 1, p. 167, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 145, March, 1927.
21. What is a magma?: Eng. and Min. Jour.-Press, vol. 120, no. 15, p. 562, October 10, 1925.
22. Angular inclusions in ore deposits (discussion): Econ. Geology, vol. 20, no. 8, pp. 766-767, December, 1925.

Spurr, Josiah Edward—Continued.

23. Alkaline sulphides as collectors of metals: *Eng. and Min. Jour.-Press*, vol. 120, no. 25, pp. 975-977, December 19, 1925; *Bol. minero*, t. 21, no. 1, pp. 12-16, January, 1926.
24. *Geology applied to mining; a first book of general geology and metallology*. 361 pp., 124 figs., New York, McGraw-Hill Book Company, 1926.
25. Formation of Porcupine quartz veins (discussion): *Econ. Geology*, vol. 21, no. 1, pp. 95-96, January-February, 1926.
26. Magmas, dikes, and veins: *Eng. and Min. Jour.*, vol. 122, no. 4, pp. 134-140, July 24, 1926.
27. Lead-zinc chimneys in limestone: *Eng. and Min. Jour.*, vol. 122, no. 8, pp. 296-298, August 21, 1926.
28. Successive banding around rock fragments in veins: *Econ. Geology*, vol. 21, no. 6, pp. 519-537, 16 figs., September, 1926; *Eng. and Min. Jour.*, vol. 122, no. 13, pp. 491-498, 18 figs., September 25, 1926.
29. Crystallization temperature of veins near the surface (discussion): *Econ. Geology*, vol. 21, no. 6, pp. 619-621, September, 1926.
30. The Kentucky-Illinois ore magmatic district: *Eng. and Min. Jour.*, vol. 122, no. 18, pp. 695-699, no. 19, pp. 731-738, 13 figs., October 30 and November 6, 1926.
31. The southeast Missouri ore magmatic district: *Eng. and Min. Jour.*, vol. 122, no. 25, pp. 968-975, 8 figs., December 18, 1926.
32. Ores of the Joplin region (Picher district [Oklahoma]): *Eng. and Min. Jour.*, vol. 123, no. 5, pp. 199-209, 10 figs., January 29, 1927.
33. Iron ores of Iron Mountain and Pilot Knob: *Eng. and Min. Jour.*, vol. 123, no. 9, pp. 363-366, 4 figs., February 26, 1927.
34. A feldspar-chalcopyrite rock-ore from Sonora: *Eng. and Min. Jour.*, vol. 123, no. 15, pp. 604-605, April 9, 1927.

Stabler, Herman.

1. (and others). *Water power of the world; Part II of World atlas of commercial geology*: U. S. Geol. Survey, 39 pp., 10 pls. (maps), 1921.

Stadnichenko, Taisia. See also White, D., 11, 19.

1. (and White, David). Microthermal observations on some carbonaceous rocks: *Oil and Gas Jour.*, vol. 24, no. 46, p. 120, April 8, 1926.
2. (and White, David). Microthermal observations of some oil shales and other carbonaceous rocks: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 9, pp. 860-876, September, 1926.

Stadnichenko, Maria M.

1. The Foraminifera and Ostracoda of the marine Yegua of the type sections: *Jour. Paleontology*, vol. 1, no. 3, pp. 221-243, 2 pls., December, 1927.

Stainbrook, Merrill A. See also Thomas, A. O., 14.

1. Apparent fossil fruits from the Fort Union beds of North Dakota: *Iowa Acad. Sci., Proc.*, vol. 30, pp. 455-458, 2 figs. [1924].
2. (and Ladd, H. S.). Fauna of State beds (abstract): *Pan-Am. Geologist*, vol. 42, no. 5, p. 382, December, 1924.
3. (and Ladd, H. S.). The fauna of the State Quarry beds: *Iowa Acad. Sci., Proc.*, vol. 31, pp. 353-366, 1 pl. [1926?].

Stalder, Walter.

1. The Ciervo anticlinal-bow oil field of [Fresno County] California: Eng. and Min. Jour., vol. 113, no. 10, pp. 409-413, 6 figs., March 11, 1922.
2. A section of the Monterey (Salinas) shales in Pine Canyon, Monterey County, California: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 1, pp. 55-60, 1 fig., January-February, 1924.

Staley, C. G. See Powell, 1.

Stansfield, Edgar.

1. (and others). Analyses of Alberta coal: Alberta, Sci. and Indus. Research Council, Rept. no. 14, 63 pp., 20 figs., 1925.

Stansfield, John.

1. Surface deposits of southeastern Saskatchewan: Canada, Geol. Survey, Summ. Rept., 1918, pt. C, pp. 42-48, 1919.
2. Hornblendite at Vavasour mine, Cantley, Quebec: Geol. Mag., vol. 57, p. 307, July, 1920.
3. Banded precipitates of vivianite in a Saskatchewan fire clay: Geol. Mag., vol. 59, no. 8, pp. 356-358, 1 pl., August, 1922.
4. Extensions of the Montereian petrographical province to the west and northwest [Quebec]: Geol. Mag., vol. 60, no. 10, pp. 433-453, 2 figs., October, 1923.
5. Nomenclature and relations of the lamprophyres: Geol. Mag., vol. 60, no. 12, pp. 550-554, December, 1923.
6. Chemical characters of okaite: Am. Jour. Sci., 5th ser., vol. 11, pp. 396-398, May, 1926.
7. Assimilation and petrogenesis; separation of ores from magmas. 197 pp., 30 pls., Urbana, Ill., Valley Publishing Co., 1928.

Stanton, Timothy William. See also Cockerell, 1; Galloway, 4.

1. Mesozoic history of Mexico, Central America, and the West Indies: Geol. Soc. America, Bull., vol. 29, no. 4, pp. 601-606, December 30, 1918.
2. [Correlation of western Upper Cretaceous formations]: U. S. Geol. Survey, Prof. Paper 120, pp. 165-167, 1919.
3. The fauna of the Cannonball marine member of the Lance formation: U. S. Geol. Survey, Prof. Paper 128, pp. 1-60, 9 pls., 3 figs., August 11, 1920; abstract by R. W. Stone, Washington Acad. Sci., Jour., vol. 11, no. 6, p. 138, March 19, 1921.
4. A new Cretaceous rudistid from the San Felipe formation of Mexico: U. S. Nat. Mus., Proc., vol. 59, pp. 453-454, September 14, 1921.
5. Some problems connected with the Dakota sandstone: Geol. Soc. America, Bull., vol. 33, no. 1, pp. 255-272, 2 pls., March 31, 1922.
6. Affinities of the Cannonball fauna: Pan-Am. Geologist, vol. 37, no. 1, pp. 64-65, February, 1922.
7. Biotic taxonomy of Comanche succession: Pan-Am. Geologist, vol. 38, no. 3, pp. 266-268, October, 1922.
8. [Review of] The geology and invertebrate paleontology of the Comanchean and "Dakota" formations of Kansas, by W. H. Twenhofel: Am. Jour. Sci., 5th ser., vol. 9, pp. 340-341, April, 1925.
9. Evidence of invertebrates on the question of climatic zones during Mesozoic time: Sci. Monthly, vol. 20, no. 5, pp. 459-463, May, 1925.
10. Climatic zones of Mesozoic times (abstract): Pan-Am. Geologist, vol. 44, no. 1, pp. 70-71, August, 1925.

Stanton, Timothy William—Continued.

11. Well log in northern Ziebach County; the fossil content: South Dakota Geol. and Nat. Hist. Survey, Circular 18, pp. 8–14, September, 1925.
12. Two new faunas in the marine upper Triassic of Nevada (abstract): Science, new ser., vol. 63, p. 485, May 7, 1926.
13. The Cretaceous of Texas: Am. Jour. Sci., 5th ser., vol. 13, pp. 517–522, June, 1927.
14. The Lower Cretaceous or Comanche series: Am. Jour. Sci., 5th ser., vol. 16, pp. 399–409, 1 fig., November, 1928; (abstract), Geol. Soc. America, Bull., vol. 39, no. 1, p. 276, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 3, p. 240, April, 1928.

Stark, J. T.

1. The primary structure of the Kekequabic granite [northeastern Minnesota]: Jour. Geology, vol. 35, no. 8, pp. 723–733, 3 figs., November–December, 1927.

Staub, Walther.

1. (and Lagler, Carl). Ueber eine erloschene vulkanische Tätigkeit in der Golfregion des nordöstlichen Mexiko: Zeitschr. Vulkanologie, Bd. 6, H. 3, pp. 103–113, 3 pls., April, 1922.
2. Beiträge zur Landeskunde des nordöstlichen Mexico: Gesell. Erdkunde Berlin, Zeitschr., 1923, no. 5–7, pp. 187–212, 3 figs., 1923.
3. Zur Kenntniss der Anordnung der Gebirgsketten in Ostmexiko: Geol. Rundschau, Bd. 16, H. 3, pp. 161–166, 1 fig., June 30, 1925.
4. Der Unterbau des Erdölgebietes von nordost Mexiko: Zeitschr. prakt. Geologie, Jg. 34, H. 8, pp. 120–125, August, 1926.

Stauffer, Clinton Raymond.

1. (and Schroyer, C. R.). The Dunkard series of Ohio: Ohio Geol. Survey, Fourth series, Bull. 22, 167 pp., 14 pls. (incl. map), 1920.
2. Devonian of Minnesota (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 34–35, March 31, 1921.
3. The Minnesota Devonian and its relationship to the general Devonian problem of North America: Am. Jour. Sci., 5th ser., vol. 4, pp. 396–412, 1 fig., November, 1922.
4. The fossil elephants of Minnesota: Science, new ser., vol. 60, pp. 40–41, July 11, 1924.
5. The Jordan sandstone [Minnesota]: Jour. Geology, vol. 33, no. 7, pp. 699–713, 1 fig., October–November, 1925.
6. Mineralization of the Platteville-Decorah contact zone in the Twin City region: Geol. Soc. America, Bull., vol. 36, no. 4, pp. 615–622, December 30, 1925; abstract, no. 1, p. 169, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, pp. 158–159, March, 1925.
7. Minnesota's oil and gas possibilities: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 2, pp. 190–196, 1 fig. (map), February, 1926.
8. Devonian section in the Santa Rita Mountains of Arizona (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 133, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 77, February, 1927.
9. Age of the Red Clastic series of Minnesota (with discussion by Alfred C. Lane): Geol. Soc. America, Bull., vol. 38, no. 3, pp. 469–477, 1 fig., September, 1927; abstract, no. 1, p. 122, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 154, March, 1927.
10. New and little known fossils from Ordovician of Minnesota (abstract): Pan-Am. Geologist, vol. 49, no. 3, p. 228, April, 1928.

Stauffer, Clinton Raymond—Continued.

11. The Devonian section on Pinal Creek, Arizona: *Ohio Jour. Sci.*, vol. 28, no. 3, p. 152, May (abstract), no. 5, pp. 253-260, September, 1928; abstract, *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, p. 174, 1928.
12. Devonian of the Santa Rita mountains, Arizona: *Geol. Soc. America, Bull.*, vol. 39, no. 2, pp. 439-433, June, 1928.

Staunton, W. F.

1. Ore possibilities at the Congress mine [Yavapai County, Arizona]: *Eng. and Min. Jour.*, vol. 122, no. 20, pp. 769-771, 2 figs., November 13, 1926.

Stearn, Noel H.

1. A background for the application of geomagnetics to exploration: *Am. Inst. Min. and Met. Eng., Tech. Pub. no. 150*, 28 pp., October, 1928.
2. The dip needle as a geological instrument: *Am. Inst. Min and Met. Eng., Tech. Pub. no. 151*, 19 pp., 7 figs., October, 1928.

Stearns, Harold T.

1. Note on the first discovery of vanadinite in Idaho: *Am. Mineralogist*, vol. 8, no. 7, pp. 127-128, July, 1923.
2. The origin of a niter deposit near Dubois, Idaho: *Am. Mineralogist*, vol. 9, no. 6, pp. 135-137, June, 1924.
3. Craters of the Moon National Monument [Idaho]: *Geog. Rev.*, vol. 14, no. 3, pp. 362-372, 9 figs., July, 1924.
4. Igneous geology of the Mud Lake Basin, Idaho (abstract): *Washington Acad. Sci., Jour.*, vol. 19, no. 15, pp. 380-381, September 19, 1924.
5. The 1924 eruption of the Hawaiian volcano: *Sci. Am.*, vol. 132, pp. 242-243, 6 figs., April, 1925.
6. (and Bryan, L. L.). Preliminary report on the geology and water resources of the Mud Lake Basin, Idaho: *U. S. Geol. Survey, Water-Supply Paper 560*, pp. 87-132, 2 figs., 2 pls. (maps), October 20, 1925.
7. The explosive phase of Kilauea Volcano, Hawaii, in 1924: *Bull. volcanologique*, 2^e ann., nos. 5-6, pp. 193-208, 13 pls., 1925; abstract, *Zeitschr. Vulkanologie*, Bd. 10, H. 1, pp. 46-47, September, 1926.
8. Origin of the volcanoes of Mauna Loa and Kilauea (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 150-151, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 158, March, 1926.
9. Volcanism in the Mud Lake area, Idaho: *Am. Jour. Sci.*, 5th ser. vol. 11, pp. 353-363, 7 figs., April, 1926.
10. The Keaiwa or 1823 lava flow from Kilauea Volcano, Hawaii: *Jour. Geology*, vol. 34, no. 4, pp. 336-351, 7 figs., May-June, 1926.
11. The great explosions of Kilauea Volcano in 1924 (abstract): *Washington Acad. Sci., Jour.*, vol. 16, no. 18, pp. 502-503, November 3, 1926.
12. The "Craters of the Moon" in Idaho: *Geog. Jour.*, vol. 71, no. 1, pp. 43-49, 1 fig., 2 pls., January, 1928.
13. Record of earthquake made by automatic recorders on wells in California: *Seismological Soc. America, Bull.*, vol. 18, no. 1, pp. 9-15, 3 figs., March, 1928.
14. Craters of the Moon National Monument, Idaho: *Idaho Bur. Mines and Geology, Bull. no. 13*, 57 pp., 21 pls., July, 1928.
15. Lava Beds National Monument, California: *Geog. Soc. Philadelphia, Bull.*, vol. 26, no. 4, pp. 239-253, 12 figs., October, 1928.

Stearns, Norah Dowell. See also Meinzer, 9.

1. Laboratory tests of water-bearing materials (abstract): *Pan-Am. Geologist*, vol. 44, no. 1, pp. 77-78, August, 1925.

Stearns, Norah Dowell—Continued.

2. Report on the geology and ground-water hydrology of the experimental area of the United States Public Health Service at Fort Caswell, North Carolina: U. S., Hygienic Laboratory, Bull. no. 147, pp. 137-168, 8 figs., 2 pls., 1927.
3. Exploring the Craters of the Moon, Idaho: Geog. Soc. Philadelphia, Bull., vol. 26, no. 4, pp. 279-290, 5 figs., October, 1928.

Steele, L. L.

1. Notes on two fossil coal resins: Am. Jour. Sci., 5th ser., vol. 7, pp. 389-392, May, 1924.

Stefanini, Giuseppe.

1. Relations between American and European Tertiary echinoid faunas: Geol. Soc. America, Bull., vol. 35, no. 4, pp. 827-846, 4 figs., December 30, 1924.

Stefansson, Vilhjalmur.

1. Polar temperatures and coal measures: Nature, vol. 112, p. 162, August 4, 1923.

Steidtmann, Edward.

1. Feldspars as indicators of sedimentary or igneous origin of gneisses and schists: Geol. Soc. America, Bull., vol. 31, no. 1, pp. 141-144, March 31, 1920.
2. Summaries of pre-Cambrian literature of North America: Jour. Geology, vol. 28, no. 6, pp. 558-568, no. 7, pp. 643-658, no. 8, pp. 743-751, 1920.
3. Summaries of pre-Cambrian literature of North America: Jour. Geology, vol. 29, no. 1, pp. 81-86, January-February; no. 2, pp. 173-187, February-March, 1921.
4. (and Cathcart, S. H.). Geology of the York tin deposits, Alaska: U. S. Geol. Survey, Bull. 733, 130 pp., 23 figs., 12 pls. (incl. maps), 1922.
5. Limestones and marls of Wisconsin: Wisconsin Geol. and Nat Hist. Survey, Bull. no. 66, 208 pp., 19 figs., 6 pls. (incl. map), 1924.
6. Faceted sandstone pebbles of the North River, Virginia: Jour. Geology, vol. 34, no. 8, pp. 836-839, 1 fig., November-December, 1926.

Steiger, George. See also DeGolyer, 9; Larsen, 20; Pardee, 5; Stone, 11; Twenhofel, 18, 22, 29.

1. [List of] chemical studies which bear on sedimentation: Nat. Research Council, Reprint and Circ. Ser., no. 85, pp. 20-23, 1928.

Steiner, George.

1. Torsion-balance principles as applied by the original Eötvös torsion balance: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 12, pp. 1210-1226, 12 figs., December, 1926.

Steinmayer, R. A.

1. "Surface indicators of oil" in Louisiana: Louisiana Eng. Soc., Proc., vol. 10, no. 6, pp. 257-268, 2 figs., December, 1924.
2. A geological survey of the subaqueous strata of Lake Pontchartrain, New Orleans, Louisiana: Louisiana Eng. Soc., Proc., vol. 13, no. 2, pp. 68-87, 1 fig., 4 pls. (incl. maps), April, 1927.

Stensiö, Erik Andersson.

1. On the head of the macropetalichthyids, with certain remarks on the head of the other arthrodires: Field Mus. Nat. Hist., Geol. Ser., vol. 4, no. 4, pp. 87-197, 26 figs., 13 pls., October, 1925.

Stephenson, C. D.

1. Observations on the Verden sandstone of southwestern Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 626-631, 1 fig., May-June, 1925.

Stephenson, E. A. See Johannsen, 1.

Stephenson, Lloyd William. See also Cooke, C. W., 17, 20; Dane, 1.

1. Some Upper Cretaceous shells of the rudistid group from Tamaulipas, Mexico: *U. S. Nat. Mus., Proc.*, vol. 61, art. 1, 28 pp., 15 pls., 1922.
2. Age of the producing sand, Eldorado field, Arkansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 1, p. 54, January-February, 1922.
3. A chance of more oil in southwestern Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 5, pp. 475-476, September-October, 1922.
4. The Cretaceous formations of North Carolina; Part I, Invertebrate fossils of the Upper Cretaceous formations: *North Carolina Geol. Survey*, vol. 5, pt. 1, 604 pp., 102 pls. (incl. map), 1923.
5. Geology of Alabama; The Mesozoic rocks: Alabama, *Geol. Survey, Spec. Rept. no. 14*, pp. 231-250, 15 pls., 1926.
6. Major features in the geology of the Atlantic and Gulf Coastal Plain: *Washington Acad. Sci., Jour.*, vol. 16, no. 17, pp. 460-480, 1 pl. (map), October 18, 1926.
7. On the origin of the "rock wall" at Rockwall, Texas: *Washington Acad. Sci., Jour.*, vol. 17, no. 1, pp. 1-5, 2 figs., January 3, 1927.
8. Notes on the stratigraphy of the Upper Cretaceous formations of Texas and Arkansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 1, pp. 1-17, 1 pl., January, 1927; and [note of correction] no. 3, pp. 308-309, March, 1927.
9. Additions to the Upper Cretaceous invertebrate faunas of the Carolinas: *U. S. Nat. Mus., Proc.*, vol. 72, art. 10, 25 pp., 9 pls., 1927.
10. The ground-water resources of Mississippi: *U. S. Geol. Survey, Water-Supply Paper 576*, 515 pp., 3 figs., 12 pls. (incl. map), 1928.
11. Structural features of the Atlantic and Gulf Coastal Plain (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 179, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, pp. 140-141, March, 1928.
12. Major marine transgressions and regressions, and structural features of Gulf Coastal Plain (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, pp. 301-302, May, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 275-276, March 30, 1928.
13. Upper Cretaceous or Gulf series (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 276, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 4, p. 295, May, 1928.
14. Major marine transgressions and regressions and structural features of the Gulf Coastal Plain: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 281-298, 12 figs. (maps), October, 1928.
15. Correlation of the Upper Cretaceous or Gulf series of the Gulf Coastal Plain: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 485-496, 1 pl. (chart), December, 1928.
16. Structural features of the Atlantic and Gulf Coastal Plain: *Geol. Soc. America, Bull.*, vol. 39, no. 4, pp. 887-899, 1 fig., December 30, 1928.

Sterki, V.

1. Marl deposits in Ohio and their fossil Mollusca: *Ohio Jour. Sci.*, vol. 20, no. 6, pp. 173-184, April, 1920.

Sternberg, Charles Hazelius.

1. Hunting dinosaurs in the badlands of the Red Deer River, Alberta, Canada; a sequel to the life of a fossil hunter. 232 pp., 52 pls., Lawrence, Kansas, 1917.
2. Sternberg's expedition to the Red Deer River, Alberta, 1917: Kansas Acad. Sci., Trans., vol. 29, pp. 88-91, 1920.
3. Explorations of the Permian of Texas and the chalk of Kansas, 1918: Kansas Acad. Sci., Trans., vol. 30, pp. 119-120, 1922.
4. Field work in Kansas and Texas: Kansas Acad. Sci., Trans., vol. 30, pp. 339-341, 1922.

Sternberg, Charles M.

1. A supplementary study of *Panoptosaurus mirus* [Belly River beds, Alberta]: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 15, sec. 4, pp. 93-104, 2 pls., 1921.
2. A popular description of dinosaurs: Canadian Field Naturalist, vol. 35, no. 4, pp. 61-66, April, 1921.
3. Notes on the Lance formation of southern Saskatchewan: Canadian Field-Naturalist, vol. 38, no. 4 pp. 66-70, April, 1924.
4. Integument of *Chasmosaurus belli*: Canadian Field-Naturalist, vol. 39, no. 5, pp. 108-110, 1 pl., May, 1925.
5. A new species of *Thespesius* from the Lance formation of Saskatchewan: Canada, Geol. Survey, Bull. no. 44, pp. 73-84, 1 fig., 3 pls., 1926.
6. Dinosaur tracks from the Edmonton formation of Alberta: Canada, Geol. Survey, Bull. no. 44, pp. 85-87, 1 fig., 1 pl., 1926.
7. Notes on the Edmonton formation of Alberta: Canadian Field-Naturalist, vol. 40, no. 5, pp. 102-104, May, 1926.
8. Horned-dinosaur group in the National Museum of Canada: Canadian Field-Naturalist, vol. 41, no. 4, pp. 67-73, 2 figs., April, 1927.
9. Homologies of certain bones of the ceratopsian skull: Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 135-143, 3 pls., May, 1927.
10. A new armored dinosaur [*Edmontonia longiceps*] from the Edmonton formation of Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 22, sec. 4, pp. 93-107, 3 pls., March, 1928.

Sterns, F. H.

1. The Pleistocene man of Vero, Florida: Sci. Am. Suppl., vol. 87, pp. 118-119, February 22, 1919.

Sterrett, Douglas Bovard.

1. Mica deposits of the United States: U. S. Geol. Survey, Bull. 740, 342 pp., 96 figs., 29 pls. (incl. maps), 1923.

Stetson, Henry C.

1. *Lasanius* and the problem of vertebrate origin: Jour. Geology, vol. 35, no. 3, pp. 247-263, April-May, 1927.
2. The distribution and relationships of the Trinucleidae: Harvard College, Mus. Comp. Zoology, Bull., vol. 68, no. 2, pp. 87-104, 1 pl., July, 1927.
3. Report on vertebrate paleontology: Harvard Coll., Mus. Comp. Zoology, Ann. Rept. Director, 1927-28, p. 15, 1928.
4. A new American *Thelodus*: Am. Jour. Sci., 5th ser., vol. 16, pp. 221-231, 6 figs., September, 1928.

Stevens, Blamey. See Lindgren, 18.

Stevens, John B.

1. A comparative study of the San Joaquin Valley oil fields: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 1, pp. 29-40, 3 figs., January-February, 1924.

Stevens, Neil E.

1. Two petrified palms from interior North America [*Palmoxydon* from South Dakota and from Colorado]: Am. Jour. Sci., 5th ser., vol. 1, pp. 431-443, 16 figs., May, 1921.

Stevenson, John James, 1841-1924.

1. Interrelation of the fossil fuels, IV: Am. Philos. Soc., Proc., vol. 59, no. 6, pp. 405-511, 1920.
2. Interrelations of the fossil fuels. [Combined from papers appearing in] Proceedings of the American Philosophical Society, vol. 55, 1916; vol. 56, 1917; vol. 57, 1918; vol. 59, 1920. Press of the New Era Printing Company, Lancaster, Pa., 1916-1921.
3. Geologic age characteristics of the coals: Pan-Am. Geologist, vol. 37, no. 2, pp. 139-150, March, 1922.

Stewart, Beatrice Helen.

1. The stratigraphy and paleontology of Toronto and vicinity; Part I, The Pelecypoda: Ontario Dept. Mines, 29th Ann. Rept., vol. 29, pt. 6, 58 pp., 5 pls., 1920.

Stewart, Grace Anne.

1. The fauna of the Little Saline limestone in Ste. Genevieve County: Missouri Bur. Geology and Mines, 2d ser., vol. 17, pp. 213-269, 15 pls. [1924].
2. Fauna of the Silica shale of Lucas County: Ohio, Geol. Survey, 4th ser., Bull. 32, 76 pp., 1 fig., 5 pls., 1927.
3. Fauna of the Silica shale of Lucas County, Ohio (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 297, March 30, 1928.

Stewart, James Smith.

1. Geology of the disturbed belt of southwestern Alberta: Canada, Geol. Survey, Mem. 112, 71 pp., 5 pls., map, 1919.
2. Oil and gas possibilities in northeastern British Columbia: Canada, Geol. Survey, Summ. Rept., 1919, pt. C, pp. 3-7, 1 fig., 1920.

Stewart, Ralph B. See also Clark, B. L., 14.

1. Gabb's California fossil type gastropods: Acad. Nat. Sci. Philadelphia, Proc., vol. 78, 1926, pp. 287-447, 13 pls., 1927.

Stiles, E. See Hager, D. S., 2.

Stille, Hans.

1. The shrinkage of the earth (abstract by Chester R. Longwell of an address entitled "Die Schrumpfung der Erde . . ."): Am. Jour. Sci., 5th ser., vol. 6, pp. 168-172, August, 1923.

Stillman, F. B.

1. A reconnaissance of the Wasatch front between Alpine and American Fork canyons, Utah: Jour. Geology, vol. 36, no. 1, pp. 44-55, 5 figs., January-February, 1928.

Stillwell, Frank Leslie.

1. A Bendigo problem and its bearing on force of crystallization: *Econ. Geology*, vol. 18, no. 5, pp. 506-510, 2 figs., August, 1923.
2. Origin of asbestos veins: *Econ. Geology*, vol. 20, no. 1, pp. 104-105, January-February, 1925.

Stipp, Thomas F.

1. The relation of Foraminifera to the origin of California petroleum: *California Acad. Sci., Proc.*, 4th ser., vol. 15, no. 9, pp. 263-268, April 26, 1926; *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 7, pp. 697-702, July, 1926.

Stock, Chester. See also Merriam, 8, 9, 17, 22, 24, 25, 28.

1. Cenozoic history of the ground sloth group (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 194, 322, March 31, 1920.
2. Minutes of the ninth annual meeting of the Pacific coast section of the Paleontological Society: *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 231-232, March 31, 1920.
3. An early Tertiary vertebrate fauna from the southern coast ranges of California: *California, Univ., Dept. Geology, Bull.*, vol. 12, no. 4, pp. 267-276, 6 figs., April 8, 1920.
4. Origin of the supposed human footprints of Carson City, Nevada: *Science*, new ser., vol. 51, p. 514, May 21, 1920.
5. A mounted skeleton of *Myiodon harlani*: *California, Univ., Pub., Dept. Geology, Bull.*, vol. 12, no. 6, pp. 425-430, 1 pl. November 22, 1920.
6. Minutes of the tenth annual meeting of the Pacific coast section of the Paleontological Society: *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 145-149, March 31, 1921.
7. Later Cenozoic mammalian remains from the Meadow Valley region, southeastern Nevada: *Am. Jour. Sci.*, 5th ser., vol. 2, pp. 250-264, 12 figs., November, 1921; Abstract, *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 146-147, March 31, 1921.
8. Note on an *Hipparion* tooth from the Siestan deposits of the Berkeley Hills, California: *California, Univ., Dept. Geol. Sci., Bull.*, vol. 13, no. 3, pp. 19-21, 1 fig., December 22, 1921.
9. (and Furlong, E. L.). A marsupial from the John Day Oligocene of Logan Butte, eastern Oregon: *California, Univ., Dept. Geol. Sci., Bull.*, vol. 13, no. 8, pp. 311-317, 5 figs., May 11, 1922.
10. Mammalian forms occurring in association with marine invertebrates in western North America: *Pan-Pacific Sci. Cong., Australia, 1923, Proc.*, vol. 1, pp. 880-881 [1924].
11. Some mammalian forms common to the Pliocene of America and Asia: *Pan-Pacific Sci. Cong., Australia, 1923, Proc.*, vol. 1, p. 881 [1924].
12. A recent discovery of human remains in Los Angeles, California: *Science*, new ser., vol. 60, pp. 2-5, July 4, 1924.
13. Cenozoic gravigrade edentates of western North America, with special reference to the Pleistocene Megalonychinae and Mylodontidae of Rancho La Brea [California]. 206 pp., 120 figs., 47 pls., published by the Carnegie Institution of Washington [Pub. no. 331], Washington, January, 1925.
14. Discovery of mammalian remains in Sespe beds near Santa Paula, California (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 201, March 30, 1925.

Stock, Chester—Continued.

15. Recent discovery of human remains in Los Angeles, California (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 201, March 30, 1925.
16. (and Furlong, E. L.). New canid and rhinocerotid remains from the Ricardo Pliocene of the Mohave Desert, California: California, Univ., Dept. Geol. Sci., Bull., vol. 16, no. 2, pp. 43-60, 4 pls., March 16, 1926.
17. Anchitheriine horses from Fish Lake valley region, Nevada: California, Univ., Dept. Geol. Sci., Bull., vol. 16, no. 3, pp. 61-68, 1 fig., 1 pl., April 10, 1926.
18. [Report on paleontological research]: Carnegie Inst. Washington, Year Book no. 25, 1925-6, pp. 404-405, December, 1926.
19. (and Furlong, E. L.). Skull and skeletal remains of a ruminant of the *Preptoceras-Euceratherium* group from the McKittrick Pleistocene, California: California, Univ., Dept. Geol. Sci., Bull., vol. 16, no. 10, pp. 409-434, 5 figs., 4 pls., January 25, 1927.
20. Pleistocene fauna and flora [from asphalt deposits in Carpinteria, Santa Barbara County, California]: Science, new ser., vol. 66, pp. 155-156, August 12, 1927.
21. (and Furlong, E. L.). Occurrence of Pleistocene elephant on Santa Rosa Island, California (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 315, May, 1928.
22. (and Patterson, J. W., and Furlong, E. L.). Tertiary mammalian fauna from Kern River bed, California (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 318, May, 1928.
23. A peccary from the McKittrick Pleistocene, California: Carnegie Inst. Washington, Contributions to Paleontology, Pub. no. 393, pp. 23-27, 7 figs., September, 1928.
24. *Tanupolama*, a new genus of llama from the Pleistocene of California: Carnegie Inst. Washington, Contributions to Paleontology, Pub. no. 393, pp. 29-37, 6 pls., September, 1928.
25. Canid and proboscidean remains from the Ricardo deposits, Mohave Desert, California: Carnegie Inst. Washington, Contributions to Paleontology, Pub. no. 393, pp. 39-47, 1 fig., 4 pls., September, 1928.
26. A tooth of *Hipparion mohavense* from the Puente formation, California: Carnegie Inst. Washington, Contributions to Paleontology, Pub. no. 393, pp. 49-53, 1 fig., September, 1928.

Stockdale, Paris Buell.

1. Stylolites; their nature and origin: Indiana Univ. Studies, vol. 9, Study no. 55, 97 pp., 36 figs., December, 1922.
2. Solutive genesis of stylolitic structures: Pan-Am. Geologist, vol. 39, no. 5, pp. 353-364, 3 figs., 3 pls., June, 1923.
3. The stratigraphic significance of solution in rocks: Jour. Geology, vol. 34, no. 5, pp. 399-414, 7 figs., July-August, 1926.
4. Some features of the Borden (Knobstone) rocks of southern Indiana (abstract): Ohio Acad. Sci., Proc., vol. 8, pt. 4, pp. 176-177, 1928. Ohio Jour. Sci., vol. 28, no. 3, pp. 154-155, May, 1928.

Stockley, G. M.

1. Final report of the government geological department [of Jamaica] Supplement to the Jamaica Gazette, vol. 48, no. 5, pp. 23-35, March 27, 1925.

Stockley, James. See Davis, W., 1.

Stockwell, C. H. See also Emmons, R. C., 2.

1. Galena Hill, Mayo district, Yukon: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 1-14, map, 1926.
2. An X-ray study of the garnet group: *Am. Mineralogist*, vol. 12, no. 9, pp. 327-344, September, 1927.

Stoess, P. C.

1. Arsenic deposits near Seattle, Washington: *Eng. and Min. Jour.-Press*, vol. 118, no. 21, pp. 821-822, November 22, 1924.

Stolfus, M. A. See Johnson, D. W., 6.

Stoller, James Hough.

1. Topographic features of the Hudson valley and the question of post-glacial marine waters in the Hudson-Champlain valley: *Geol. Soc. America, Bull.*, vol. 30, pp. 415-422, 2 figs., September 30, 1919; abstract, with discussion by H. L. Fairchild, pp. 90-91, March 31, 1919.
2. Glacial geology of the Cohoes quadrangle: *New York State Mus. Bull.* nos. 215, 216, 49 pp., 11 figs., 2 pls., map, 1920.
3. Late Pleistocene history of the lower Mohawk and middle Hudson region: *Geol. Soc. America, Bull.*, vol. 33, no. 3, pp. 515-526, 1 fig., September 1, 1922; abstract, vol. 33, no. 1, p. 117, March 31, 1922.

Stone, John B.

1. The products and structure of Kilauea: *Bernice P. Bishop Mus., Bull.* 33, 59 pp., 7 figs., 2 pls., 1926.
2. The Keaiwa flow of 1923, Hawaii: *Am. Jour. Sci.*, 5th ser., vol. 11, pp. 434-440, 3 figs., May, 1926.

Stone, Ralph Walter. See also Atwood, W. W., 2; Bastin, 1; Berry, 4, 11; Bowen, C. F., 1; Capps, 1; Cathcart, 3; Chapin, 1, 2, 10; Clapp, C. H., 1; Clark, F. R., 1, 2; Cockerell, 1; Collier, 1, 2, 3; Condit, 1, 2; Cushman, 1, 8; Dall, 2; Eakin, 1; Ferguson, H. G., 3; Gilmore, 4; Grout, 1; Hancock, 1; Harrington, 1, 6; Hess, 11; Hicks, 3; Howe, J. L., 1; Jones, E. L., 1, 4; Kew, 1; Knopf, E. B., 2; Lewis, J. V., 6; Loughlin, 1; Maddren, 1, 2; Martin, G. C., 1; Overbeck, 1, 2; Pardee, 2; Pennsylvania, 1; Phalen, 1; Reeves, F., 1; Shaw, E. W., 1.

1. Phosphate rock an economic army (abstract): *Geol. Soc. America, Bull.*, vol. 30, p. 104, March 31, 1919.
2. Magnesite industry (abstract): *Geol. Soc. America, Bull.*, vol. 30, p. 115, March 31, 1919.
3. Sand and gravel in 1917: *U. S. Geol. Survey, Mineral Resources*, 1917, pt. 2, pp. 381-396, February 21, 1919.
4. Magnesium in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 1, pp. 13-21, July 28, 1919.
5. Salt, bromine, and calcium chloride in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 2, pp. 117-134, August 16, 1919.
6. Phosphate rock in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 2, pp. 199-222, October 4, 1919.
7. Sand and gravel in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 2, pp. 299-315, October 31, 1919.
8. Gypsum in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 2, pp. 282-298, November 6, 1919.
9. Magnesium in 1919: *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 1, pp. 29-32, August 11, 1920.

Stone, Ralph Walter—Continued.

10. Gypsum in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 99-113, December 28, 1920.
11. (and others). Gypsum deposits of the United States: U. S. Geol. Survey, Bull. 697, 326 pp., 37 pls., 57 figs., 1920. Includes contributions by George Steiger, E. F. Burchard, H. D. Miser, F. L. Hess, R. D. George, G. F. Kay, Erasmus Haworth, R. A. Smith, J. C. Jones, N. H. Darton, D. H. Newland and Henry Leighton, J. A. Bownocker, L. C. Snider, J. G. Hutton, W. E. Wrather, C. L. Baker, B. F. Hill, C. T. Lupton, and G. W. Stose.
12. Sand and gravel in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 151-164, January 5, 1921.
13. Phosphate rock in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 211-225, February 25, 1921.
14. Salt, bromine, and calcium chloride in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 2, pp. 17-25, August 5, 1921; revised ed., February 21, 1922.
15. Phosphate rock in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 2, pp. 27-35, 1 fig., August 11, 1921.
16. Meteorites found in Pennsylvania (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 107, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, pp. 152-153, March, 1924.
17. Black granite of northern Bucks County, Pennsylvania (abstract): Pennsylvania Acad. Sci., Proc., vol. 1, p. 63, 1926.
18. Fossil ivory (abstract): Pennsylvania Acad. Sci., Proc., vol. 1, p. 81, 1926.
19. Pennsylvania building stone (abstract): Pennsylvania Acad. Sci., Proc., vol. 1, p. 100, 1926.
20. Molding sands of Pennsylvania: Pennsylvania Geol. Survey, 4th ser., Bull. M 11, 94 pp., 10 figs., 21 pls., 1928.

Stopes, Marie Carmichael.

1. The constitution of coal: Canadian Min. Jour., vol. 43, no. 31, pp. 505-506, August 4, 1922.

Storm, Willis. See also Tomlinson, 1.

1. The "2-4" shallow oil and gas field, Stephens County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 5, pp. 626-627, September-October, 1921.
2. The Velma oil and gas field, Stephens County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 5, pp. 627-629, September-October, 1921.
3. The Fox oil and gas field, Carter County, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, pp. 367-369, July-August, 1922.
4. The carbon ratio: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 3, p. 291, May-June, 1923.
5. Carbon ratios of Cretaceous coals in New Mexico in their possible relation to oil: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 4, pp. 519-524, 1 fig., July-August, 1924.

Stose, George Willis. See also Eby, J. B., 1; Jonas, 5; Mansfield, G. R., 4; Stone, 11; Willis, B., 1.

1. (and others). Manganese deposits of the west foot of the Blue Ridge, Virginia: Virginia Geol. Survey, Bull. no. 17, 166 pp., 22 pls. (incl. maps), 16 figs., 1919.

Stose, George Willis—Continued.

2. Glauberite crystal cavities in the Triassic rocks in the vicinity of Gettysburg, Pa.: *Am. Mineralogist*, vol. 4, no. 1, pp. 1-4, 1 fig., 1 pl., January, 1919.
3. Travertine from Rock Creek Park, District of Columbia (abstract, with discussion by R. S. Bassler): *Washington Acad. Sci., Jour.*, vol. 9, no. 10, p. 292, May 19, 1919.
4. Manganese deposits of the Appalachian Valley of Virginia and Tennessee (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 13, pp. 382-384, July 19, 1919.
5. Strontium in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 2, pp. 541-544, March 30, 1920.
6. Barytes and barium products in 1918: *U. S. Geol. Survey, Mineral Resources*, 1918, pt. 2, pp. 951-967, June 28, 1920.
7. Manganese ores of the Southern States: *Eng. and Min. Jour.*, vol. 110, no. 6, pp. 256-262, 7 figs., August 7, 1920.
8. Strontium in 1919: *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 2, pp. 95-98, December 9, 1920.
9. Barytes and barium products in 1919: *U. S. Geol. Survey, Mineral Resources*, 1919, pt. 2, pp. 335-347, July 28, 1921.
10. Strontium in 1920: *U. S. Geol. Survey, Mineral Resources*, 1920, pt. 2, pp. 93-95, September 17, 1921.
11. Barytes and barium products in 1920: *U. S. Geol. Survey, Mineral Resources*, 1920, pt. 2, pp. 189-199, December 6, 1921.
12. Structure of the pre-Pennsylvanian rocks of the Big Stone Gap area, Wise County, Virginia (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 98-99, March 31, 1922.
13. Strontium in 1921: *U. S. Geol. Survey, Mineral Resources*, 1921, pt. 2, pp. 31-32, July 5, 1922.
14. Barytes and barium products in 1921: *U. S. Geol. Survey, Mineral Resources*, 1921, pt. 2, pp. 125-134, September 11, 1922.
15. (and Jonas, A. I.). The lower Paleozoic section of southeastern Pennsylvania: *Washington Acad. Sci., Jour.*, vol. 12, no. 15, pp. 358-366, September 19, 1922.
16. (and Miser, H. D.). Manganese deposits of western Virginia: *Virginia Geol. Survey, Bull.* no. 23, 206 pp., 39 figs., 31 pls. (incl. maps), 1922.
17. (and Schrader, F. C.). Manganese deposits of east Tennessee: *U. S. Geol. Survey, Bull.* 737, 154 pp., 45 figs., 34 pls. (incl. maps), 1923.
18. (and Jonas, Anna I.). Ordovician overlap in the Piedmont province of Pennsylvania and Maryland: *Geol. Soc. America, Bull.*, vol. 34, no. 3, pp. 507-524, 17 figs. (incl. maps), September 30, 1923.
19. Strontium in 1922: *U. S. Geol. Survey, Mineral Resources*, 1922, pt. 2, pp. 59-61, September 12, 1923.
20. Barytes and barium products in 1922: *U. S. Geol. Survey, Mineral Resources*, 1922, pt. 2, pp., 141-152, November 3, 1923.
21. New type of structure in the Appalachians: *Geol. Soc. America, Bull.*, vol. 35, no. 3, pp. 465-480, 8 figs., September 30, 1924; abstract (with discussion by W. H. Hobbs, E. T. Wherry, A. C. Lawson, A. I. Jonas, and A. C. Spencer), no. 1, pp. 63-64, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, pp. 135-136, March, 1924.
22. The black shale of southwestern Virginia: *Jour. Geology*, vol. 32, no. 4, pp. 311-315, 1 fig., May-June, 1924.

Stose, George Willis—Continued.

23. Strontium in 1923: U. S. Geol. Survey, Mineral Resources, 1923, pt. 2, pp. 23-26, July 19, 1924.
24. Notes on the origin of Clinton hematite ores: Econ. Geology, vol. 19, no. 5, pp. 405-411, 2 figs., August, 1924.
25. Mineral resources of Adams County, Pennsylvania: Pennsylvania Geol. Survey, 4th ser., Bull. C. 1, pt. 2, 64 pp., 1 fig., 11 pls. (incl. map), 1925.
26. (and Jonas, Anna I.). Triassic sedimentary rocks and basaltic flow northwest of Lebanon, Pennsylvania (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, pp. 160-161, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 154, March 30, 1925.
27. (and Jonas, Anna I.). Triassic rocks northwest of Lebanon, Pennsylvania (abstract): Pan-Am. Geologist, vol. 43, no. 5, pp. 368-369, June, 1925.
28. (and Jonas, Anna I.). Ordovician shale and associated lava in south eastern Pennsylvania (abstract): Washington Acad. Sci., Jour., vol. 17, no. 9, p. 240, May 4, 1927.
29. (and Jonas, Anna I.). Ordovician shale and associated lava in southeastern Pennsylvania: Geol. Soc. America, Bull., vol. 38, no. 3, pp. 505-536, 10 figs., September, 1927; abstract, no. 1, pp. 138-139, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 79, February, 1927.
30. Progress on a tectonic map of Pennsylvania (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 216, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 4, pp. 319-320, May, 1927.
31. Possible post-Cretaceous faulting in the Appalachians: Geol. Soc. America, Bull., vol. 38, no. 3, pp. 493-503, 7 figs., table, September, 1927; abstract, no. 1, pp. 216-217, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 4, p. 320, May, 1927.
32. Possible post-Cretaceous faulting in the Appalachians (abstract): Washington Acad. Sci., Jour., vol. 17, no. 9, p. 235, May 4, 1927.
33. High gravels of Susquehanna River above Columbia, Pennsylvania: Geol. Soc. America, Bull., vol. 39, no. 4, pp. 1073-1086, 7 figs., 1 pl., December 30, 1928; abstract, no. 1, p. 224, March 30, 1928.

Stout, Wilber. See also Bownocker, 9; Ries, 5.

1. Geology of Muskingum County: Ohio, Geol. Survey, Fourth series, Bull. 21, 351 pp., 13 pls. (incl. maps), 1 fig., Columbus, 1918.
2. Coals of Ohio and their limitations for by-product coke: Coal Age, vol. 16, pp. 674-677, 707-711, 1 fig., October 23 and 30, 1919.
3. (and others). Coal-formation clays of Ohio: Ohio Geol. Survey, 4th ser., Bull. 26, 588 pp., 5 figs., 15 pls., map, 1923.
4. Origin of coal-formation clays: Ohio Geol. Survey, 4th ser., Bull. 26, pp. 532-568, 1923.
5. (and Lamborn, R. E.). Geology of Columbiana County: Ohio Geol. Survey, 4th ser., Bull. 28, 408 pp., 3 figs., 6 pls. (incl. maps) 1924.
6. Geology of Vinton County: Ohio, Geol. Survey, 4th ser., Bull. 31, 402 pp., 1 fig., 2 pls., 5 maps, 1927.
7. Some features of the Monongahela series (abstract): Ohio Acad. Sci., Proc., vol. 8, pt. 4, p. 175, 1928; Ohio Jour. Sci., vol. 28, no. 3, p. 153, May, 1928.

Stow, Marcellus H.

1. An occurrence of Oriskany sandstone with celestite cement: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 446-450, November, 1928.

Stoyanow, A. A.

1. Notes on recent stratigraphic work in Arizona: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 311-324, 1 fig., October, 1926.

Strachan, Robert.

1. The Crowsnest Pass coal field [British Columbia]: *Canadian Inst. Min. and Met.*, Monthly Bull., no. 102, pp. 776-778, October, 1920; *Canadian Min. Inst.*, Trans., vol. 23, pp. 276-290 [1921].

Strahorn, A. T.

1. Geology at site of proposed diversion works [at Headgate Rock, near Parker, Arizona]. In Report by C. A. Engle, Proposed irrigation project, Colorado River Indian Reservation, pp. 15-17, Hearings before Committee on Irrigation of Arid Lands, House of Representatives, 67th Cong., 2d sess., on H. R. 11449 . . . , 1922.

Straub, Charles E.

1. Effect of gravitational compaction on the structure of sedimentary rocks: *Am. Assoc. Petroleum Geologists*, Bull., vol. 11, no. 8, pp. 889-891, August, 1927.

Strauss, H. A.

1. To help lay the ghost of the "molten magma": *Eng. and Min. Jour.-Press*, vol. 118, no. 11, p. 422, September 13, 1924.

Stromborg, Oscar.

1. Discussion of the question, "Where does petroleum come from?": *Oil Age*, vol. 23, no. 1, pp. 59, 61, January, no. 2, pp. 41, 43, 4 figs., February, 1926.

Stroud, Benjamin Kendrick. See also Scott, W. W., 1.

1. The Monroe gas field, Louisiana: *Am. Assoc. Petroleum Geologists Bull.*, vol. 7, no. 5, pp. 565-574, September-October, 1923.

Stryker, W. L. See also Twenhofel, 20.

1. Subsurface geology of Wilson County, Kansas: *Am. Assoc. Petroleum Geologists*, Bull., vol. 9, no. 8, pp. 1207-1214, 3 pls., November, 1925.

Stuart, Murray.

1. The natural gas associated with oil deposits: *Econ. Geology*, vol. 22, no. 3, pp. 310-311, May, 1927.

Stuckey, Jasper L. See also Drane, 3.

1. The pyrophyllite deposits of the Deep River region of North Carolina: *Econ. Geology*, vol. 20, no. 5, pp. 442-463, 2 figs. (incl. map), 2 pls., August, 1925.
2. Chloritoid from the Deep River region, North Carolina: *Am. Mineralogist*, vol. 11, no. 7, pp. 186-188, July, 1926.
3. The pyrophyllite deposits of Moore and Chatham counties, North Carolina (abstract): *Elisha Mitchell Sci. Soc.*, Jour., vol. 43, nos. 1-2, p. 12, December, 1927.
4. A Cretaceous sandstone quarry near Kinston, North Carolina (abstract): *Elisha Mitchell Sci. Soc.*, Jour., vol. 44, no. 1, pp. 22-23, September, 1928.

Stuckey, Jasper L.—Continued.

5. The pyrophyllite deposits of North Carolina, with a more detailed account of the geology of the Deep River region: North Carolina, Dept. Conservation and Development, Bull. no. 37, 62 pp., 1 fig., 1 pl. (maps), 1928.

Stull, Ray Thomas.

1. Distribution of kaolin and bauxite of the Coastal Plain of Georgia: Am. Ceramic Soc., Jour., vol. 7, no. 7, pp. 513-522, 2 figs., July, 1924.
2. (and Bole, G. A.). Beneficiation and utilization of Georgia clays: U. S. Bur. Mines, Bull. 252, 72 pp., 23 figs., 1926.

Sturdevant, Glenn E. See Gilmore, 37.

Suárez Murias, Eduardo R.

1. Visita de inspección á la Isla de Pinos: Cuba, Dirección Montes y Minas, Boletín de Minas, no 6, pp. 24-28, 1 fig., 1920.
2. Reconocimiento de la zona minera comprendida entre Bahía Honda y La Palma, provincia de Pinar del Río: Cuba, Dirección Montes y Minas, Boletín de Minas, no. 6, pp. 29-32, 1 fig., 1920.
3. Visita de inspección á las minas de cromo de San Miguel de los Baños: Cuba, Dirección Montes y Minas, Boletín de Minas, no. 6, pp. 39-40, 1920.
4. Mineral resources of Cuba: Eng. and Min. Jour.-Press, vol. 114, no. 5, pp. 197-198, July 29, 1922.

Sudbury, Louise.

1. What is the first fossil collected by man?: Science, new ser., vol. 68, p. 135, August 10, 1928.

Sulzer, Elmer G.

1. Erosional freaks of the Saluda limestone: Indiana Acad. Sci., Proc. 1918, p. 309, 1919.
2. Remnant monument near Madison: Indiana Acad. Sci., Proc. 1918, pp. 310-311, 3 figs., 1919.

Suman, John R.

1. The Saratoga oil field, Hardin County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 263-285, 5 figs., March-April, 1925; Geology of salt dome oil fields, pp. 501-523, 5 figs., 1926.
2. Edwin Theodore Dumble: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 4, pp. 439-440, April, 1927.

Sundberg, Karl.

1. (and Nordstrom, Allan). Electrical prospecting for molybdenite at Questa, New Mexico: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 122, 13 pp., 10 figs., August, 1928.

Sur, Forest John Swears.

1. Condition of the Spindletop oil field [Beaumont, Texas]: Eng. and Min. Jour., vol. 111, no. 6, p. 273, 2 figs., February 5, 1921.
2. Two oil tests which may prove Utah to be a great oil producing State: Oil Age, vol. 25, no. 2, p. 28, February, 1928.

Sutton, A. H. See also Romer, 9; Weller, 17.

1. Map of the geology of the Dawson Springs quadrangle, Caldwell, Hopkins, and Christian counties, Kentucky: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1:62,500.
2. Preliminary map of the areal and structural geology of Christian County, Kentucky: Kentucky Geol. Survey, ser. 6, 1928. Scale 1:62,500.

Sutton, Chase E. See Hill, H. B., 1.

Swanson, Clarence Otto. See also Mead, W. J., 3.

1. The origin, distribution, and composition of laterite: *Am. Ceramic Soc., Jour.*, vol. 6, no. 12, pp. 1248-1260, 1 fig., December, 1923.
2. The genesis of the Texada Island magnetite deposits: *Canada, Geol. Survey, Summ. Rept.*, 1924, pt. A, pp. 106-144, 5 figs., 1925.
3. Notes on stress, strain, and joints: *Jour. Geology*, vol. 35, no. 3, pp. 193-223, 15 figs., April-May, 1927.
4. Isostasy and mountain building: *Jour. Geology*, vol. 36, no. 5, pp. 411-433, 2 figs., July-August, 1928.

Swanson, W. L.

1. Geology of certain base and meridian lines west of Lake Nipigon: *Ontario Dept. Mines, 32d Ann. Rept.*, vol. 32, pt. 3, 1923, pp. 8-22, 3 pls., 1924.
2. The mineral association of the wolframite deposits at Burnt Hill Brook, York County, New Brunswick: *Toronto, Univ., Studies, Geol. ser.* no. 20, pp. 28-32, 1925.

Swartley, Arthur M.

1. Mineral resources of Oregon: *Northwest Mines Handbook*, vol. 1, pp. 294-299, Spokane, Washington, Sidney Norman, 1918.

Swartz, Charles Kephart. See also Prouty, 9.

1. (and Bassler, Harvey). Typical section of the Allegheny formation (abstract): *Geol. Soc. America, Bull.*, vol. 30, no. 1, pp. 153-154, March 31, 1919.
2. (and Price, W. Armstrong, and Bassler, Harvey). Coal measures of Maryland: *Geol. Soc. America, Bull.*, vol. 30, no. 4, pp. 567-596, 2 pls., 1 fig., December 31, 1919; abstract, no. 1, p. 154, March 31, 1919.
3. (and Baker, Wm. A., jr.). The coal formations and mines of Maryland, with introduction by Edward Bennett Mathews: *Maryland Geol. Survey*, vol. 11, pp. 27-288, 10 figs., 7 pls. (incl. map), 1922.
4. Distribution and stratigraphy of the coal measures of Maryland; Correlation of the coal measures of Maryland; The coal basins of Maryland: *Maryland Geol. Survey*, vol. 11, pp. 35-126, 1922.
5. (and Hall, George M.). Stratigraphy of the Carboniferous of Maryland: *Maryland Geol. Survey*, vol. 11, pp. 337-348, 1922.
6. Geologic relations and geographic distribution of the Silurian strata of Maryland; Stratigraphic and paleontologic relations of the Silurian strata of Maryland: *Maryland Geol. Survey, Silurian*, pp. 19-23, 25-51, 1 fig., 4 pls., 1923.
7. Sections of the Wills Creek and Tonoloway formations: *Maryland Geol. Survey, Silurian*, pp. 105-181, 1 pl., 1923.
8. Correlation of the Silurian formations of Maryland with those of other areas: *Maryland Geol. Survey, Silurian*, pp. 183-232, 1923.
9. (and others). Systematic paleontology; Silurian (Coelenterata, Mollusca, Trilobita, by C. K. Swartz and W. F. Prouty; Vermes and Brachiopoda, by W. F. Prouty and C. K. Swartz; Bryozoa, by R. S. Bassler; Ostracoda, by E. O. Ulrich and R. S. Bassler; Merostomata, by C. K. Swartz): *Maryland Geol. Survey, Silurian*, pp. 393-778, 59 pls., 1923.

Swartz, Charles Kephart—Continued.

10. Earlier Silurian formations of Pennsylvania (abstract, with discussion by George H. Ashley and George H. Chadwick): *Geol. Soc. America, Bull.*, vol. 35, pp. 104-105, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, p. 152, March, 1924.

Swartz, Joel Howard.

1. The age of the Chattanooga shale of Tennessee: *Am. Jour. Sci.*, 5th ser., vol. 7, pp. 24-30, January, 1924.
2. Brief notice of a new radioactive method of determining the age of the earth (abstract): *Elisha Mitchell Sci. Soc., Jour.*, vol. 41, nos. 1-2, pp. 21-22, September, 1925.
3. Brief notice of two new methods of stratigraphic correlation, with special reference to the Chattanooga black shale (abstract): *Elisha Mitchell Sci. Soc., Jour.*, vol. 41, nos. 1-2, pp. 22-23, September, 1925.
4. The Big Stone Gap shale of southwestern Virginia: *Science*, new ser., vol. 64, p. 226, September 3, 1926.
5. A self-correcting formula for the calculation of rock thickness (abstract): *Elisha Mitchell Sci. Soc., Jour.*, vol. 42, nos. 1-2, pp. 11-12, October, 1926.
6. The Chattanooga shale of southwestern Virginia (abstract): *Elisha Mitchell Sci. Soc., Jour.*, vol. 42, nos. 1-2, p. 13, October, 1926.
7. The age of the Big Stone Gap shale of southwestern Virginia: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 512-531, 3 figs., December, 1926.
8. Subaerial sun cracks: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 69-70, July, 1927.
9. The Chattanooga age of the Big Stone Gap shale of southwestern Virginia: *Science*, new ser., vol. 66, pp. 36-37, July 8, 1927.
10. The Chattanooga age of the Big Stone Gap shale: *Am. Jour. Sci.*, 5th ser., vol. 14, pp. 485-499, 2 figs., December, 1927.
11. Chattanooga shale in eastern Tennessee and Virginia (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 201, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, pp. 153-154, March, no. 4, pp. 300-301, May, 1929.
12. The Devonian-Mississippian black shales of Virginia and Tennessee (abstract): *Elisha Mitchell Sci. Soc., Jour.*, vol. 44, no. 1, pp. 20-21, September, 1928.
13. Some X-ray studies of fossils (abstract): *Elisha Mitchell Sci. Soc., Jour.*, vol. 44, no. 1, p. 22, September, 1928.

Swedenborg, E. A. See Ross, J. S., 1.

Sweet, P. W. K. See Wright, A., jr., 1.

Swift, T. T.

1. Date of channel trenching in the Southwest: *Science*, new ser., vol. 63, pp. 70-71, January 15, 1926.

Swigart, Theodore Earl.

1. (and Schwarzenbek, F. X.). Petroleum engineering in the Hewitt oil field, Oklahoma: U. S. Bur. Mines in cooperation with the State of Oklahoma and the Ardmore [Oklahoma] Chamber of Commerce. 135 pp., 41 figs., January, 1921.

Swinnerton, Allyn C.

1. A method of estimating postglacial time: *Science*, new ser., vol. 62, p. 566, December 18, 1925.

Swinnerton, Allyn C.—Continued.

2. Observation on some details of wave erosion; wave furrows and shore potholes: *Jour. Geology*, vol. 35, no. 2, pp. 171–179, 6 figs., February–March, 1927.
3. Ohio geologists' field trip: *Science*, new ser., vol. 65, p. 610, June 24, 1927.
4. Varied significance of term geosyncline: *Pan-Am. Geologist*, vol. 48, no. 3, pp. 195–200, October, 1927; abstract, vol. 47, no. 4, pp. 317–318, 1927.

Sykes, Godfrey.

1. The delta and estuary of the Colorado River: *Geog. Rev.*, vol. 16, no. 2, pp. 232–255, 16 figs., 1 pl. (map), April, 1926.

Symons, Henry H.

1. California mineral production for 1927: California, Dept. Nat. Res. Div. Mines and Mining, Bull. no. 101, 311 pp., September, 1928.

Taber, Stephen. See also Hobbs, 7; Reid, H. F., 1, 2, 3, 4.

1. The mechanics of vein formation (with discussion): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 61, pp. 3–41, 5 figs., 1920.
2. Jamaica earthquakes and the Bartlett trough: *Seismol. Soc. America, Bull.*, vol. 10, no. 2, pp. 55–89, 1 pl., June, 1920.
3. The Inglewood earthquake in southern California, June 21, 1920: *Seismol. Soc. America, Bull.*, vol. 10, no. 3, pp. 129–145, 1 fig., 7 pls., September, 1920.
4. The earthquake problem in southern California: *Seismol. Soc. America, Bull.*, vol. 10, no. 4, pp. 276–289, December, 1920.
5. The Los Angeles earthquakes of July, 1920: *Seismol. Soc. America, Bull.*, vol. 11, no. 1, pp. 63–79, 1 fig., March, 1921.
6. The great fault troughs of the Antilles: *Jour. Geology*, vol. 30, no. 2, pp. 89–114, 1 fig., 1 pl., February–March, 1922; abstract with discussion by W. H. Hobbs, *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 47, March 31, 1921.
7. The seismic belt of the Greater Antilles: *Seismol. Soc. America, Bull.*, vol. 12, no. 4, pp. 199–219, 1 pl., December, 1922.
8. Some criteria used in recognizing active faults: *Geol. Soc. America, Bull.*, vol. 34, no. 4, pp. 661–668, 1 fig., December 30, 1923.
9. The origin of veins of fibrous minerals: *Econ. Geologist*, vol. 19, no. 5, pp. 475–486, 5 figs., August, 1924.
10. The Inglewood fault zone [California]: *Seismol. Soc. America, Bull.*, vol. 14, no. 3, pp. 197–199, September, 1924.
11. The active fault zones of the Greater Antilles: *International Geol. Cong.*, 13th Sess., Belgium, 1922, fasc. 2, pp. 731–736, 1 fig., 1925.
12. Evidence on Basin Range structure: *Science*, new ser., vol. 62, pp. 436–437, November 13, 1925.
13. Metasomatism and the pressure of growing crystals (discussion): *Econ. Geology*, vol. 21, no. 7, pp. 717–727, 1 fig., November, 1926.
14. The origin of veins: *Eng. and Min. Jour.*, vol. 122, no. 22, pp. 858–859, November 27, 1926.
15. Fault troughs: *Jour. Geology*, vol. 35, no. 7, pp. 577–606, 7 figs., October–November, 1927.
16. The linear force of growing crystals (discussion): *Econ. Geology*, vol. 23, no. 3, pp. 335–336, May, 1928.
17. Effect of earthquakes on artesian waters: *Econ. Geology*, vol. 23, no. 6, pp. 696–697, September–October, 1928.

Taff, Joseph Alexander. See also Gaylord, 1.

1. Proceedings of the fifteenth summer meeting, held in conjunction with the sixteenth annual meeting of the Cordilleran section, University of California and Stanford University, August 3, 4, and 5, 1915: Geol. Soc. America, Bull., vol. 31, pp. 177-184, March 31, 1920.
2. Proceedings of the seventeenth annual meeting of the Cordilleran section, held at San Diego, California, August 10, 1916: Geol. Soc. America, Bull., vol. 31, pp. 185-186, March 31, 1920.
3. Proceedings of the eighteenth annual meeting of the Cordilleran section, held at Stanford University, California, April 6 and 7, 1917: Geol. Soc. America, Bull., vol. 31, pp. 187-190, March 31, 1920.
4. (and Hanna, G. D.). Notes on the age and correlation of the Moreno shale [California]: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 8, pp. 812-814, August, 1926.
5. Edward T. Dumble: Mining and Metallurgy, vol. 8, no. 243, p. 154, March, 1927.
6. (and Hanna, G. D.). A geologic section in the center of the San Joaquin Valley, California Acad. Sci., Proc., 4th ser., vol. 16, no. 16, pp. 509-515, April 27, 1927.
7. Preliminary report on the geology of the Arbuckle and Wichita Mountains in Indian Territory and Oklahoma: Oklahoma Geol. Survey, Bull. no. 12, 95 pp., 1 fig., 8 pls. (incl. maps), January, 1928. (Republication of U. S. Geol. Survey, Prof. Paper 31, pp. 11-81, 1904.)

Taft, H. H.

1. The Sierra Madre of northwestern Mexico: Eng. and Min. Jour., vol. 113, no. 2, pp. 48-50, January 14, 1922.

Tait, John.

1. (and Brown, Barnum). How the Ceratopsia carried and used their head: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 22, sec. 5, pp. 13-23, 1 fig., 1 pl., 1928.

Takahashi, Jun-ichi R.

1. Diatom theory of origin of petroleum in California (abstract with discussion by Dallas Hanna, Warren D. Smith, and Robert Anderson): Geol. Soc. America, Bull., vol. 36, no. 1, pp. 206-207, March 30, 1925.
2. Preliminary report on the origin of California petroleum: Econ. Geology, vol. 22, no. 2, pp. 133-157, March-April, 1927.
3. On the diatom theory of the origin of petroleum in California (abstract): Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., pp. 1613-1614, 1928.

Talbot, H. W.

1. The origin of peat: Pahasapa Quart., vol. 8, no. 2, pp. 69-72, February, 1919.

Taliaferro, Nicholas Lloyd. See also Hudson, 3, 4.

1. Notes on the geology of Ventura County, California: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 6, pp. 789-810, 1 fig., 1 pl., November-December, 1924.

Talmage, Sterling B.

1. The diagnostic value of color in polished sections: Econ. Geology, vol. 20, no. 2, pp. 168-180, 1 fig., March-April, 1925.
2. Quantitative standards for hardness of the ore minerals: Econ. Geology, vol. 20, no. 6, pp. 531-553, September-October, 1925.

Tams, E.

1. Erdbeben und Ausbruch des Katmai: *Zeitschr. Vulkanologie*, Bd. 8, H. 3, pp. 137-149, 1 pl. (map), October, 1924.

Tanner, Vasco Myron.

1. Notes on the collection of fossil fishes contained in the University of Utah, with the description of one new species: *Utah, Univ., Bull.*, vol. 15, no. 6 (*Geol. Bull.*), 16 pp., 3 pls., May, 1925.

Tansey, Vivian Ouray.

1. The fauna and the correlation of the Bailey limestone in the Little Saline Creek area of Ste. Genevieve County, Missouri: *Missouri Bur. Geology and Mines*, 2d ser., vol. 17, pp. 166-212, 17 pls. [1924.]

Tanton, Thomas Leslie.

1. The Harricanaw-Turgeon basin, northern Quebec: *Canada, Geol. Survey, Mem.* 109, 84 pp., 9 pls. (incl. map), 2 figs., 1919.
2. The Canadian National Railways between Longuelac and Oba, northern Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1918, pt. E, pp. 1-3, 1919.
3. Shore of Lake Superior between Port Arthur and Nipigon: *Canada, Geol. Survey, Summ. Rept.*, 1919, pt. E, pp. 1-7, map, 1920.
4. Silver Islet and vicinity, Thunder Bay district, Ontario: *Canadian Min. Inst., Monthly Bull.* no. 97, pp. 415-430, 5 figs., May, 1920; *Trans.*, vol. 23, pp. 402-418, 5 figs. [1921].
5. Thunder Bay district, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1920, pt. D, pp. 1-2, 1921.
6. Nipigon-Schreiber district, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1920, pt. D, pp. 2-7, 1921.
7. Geology [on map of] Explored routes in a belt traversed by the Canadian National Railways between Longlac and Nipigon, Thunder Bay district, Ontario. Scale, 4 miles to 1 inch. *Canada, Geol. Survey, Pub. no.* 1836, 1921.
8. An exploration north of Thunder Bay, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1921, pt. D, pp. 1-6, 1922.
9. Palladium-bearing nickel deposit at Shebandowan Lake, Thunder Bay district, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1922, pt. D, pp. 1-8, 2 figs., 1923.
10. Gold occurrence at Makwa, Sudbury district, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1922, pt. D, pp. 9-12, 1 fig., 1923.
11. The effect of glaciation on prospecting for mineral deposits in the Laurentian Plateau: *Geog. Rev.*, vol. 13, no. 1, pp. 107-111, 1 fig., January, 1923.
12. Iron formation at Gravel Lake, Thunder Bay district, Ontario: *Canada, Geol. Survey, Summ. Rept.* 1923, pt. C1, pp. 1-5, 1924.
13. Evidence of liquid immiscibility in a silicate magma, Agate Point, Ontario: *Jour. Geology*, vol. 33, no. 6, pp. 629-641, 4 figs., August-September, 1925.
14. Recognition of the Coutchiching near Steeprock Lake, Ontario: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 20, sec. 4, pp. 39-49, 4 figs., 1926.
15. Eastern part of Matawin iron range, Thunder Bay district, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1924, pt. C, pp. 1-27, 1 fig., map, 1926.
16. Mineral deposits of Steeprock Lake map area, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1925, pt. C, pp. 1-11, 1927.

Tanton, Thomas Leslie—Continued.

17. Stratigraphy of the northern subprovince of the Lake Superior region (with discussion by F. F. Grout, T. L. Tanton, R. C. Allen, and C. K. Leith): *Geol. Soc. America, Bull.*, vol. 38, no. 4, pp. 731-748, 11 figs., December 30, 1927; abstract, no. 1, pp. 114-115, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 67, February, 1927.
18. Emulsions of silicates: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 66-68, January, 1928.

Tarr, Ralph Stockton, 1864-1912.

1. (and von Engeln, O. D.). *New Physical geography*. xii, 689 pp., 543 figs., 8 pls., New York, The Macmillan Company, 1926.

Tarr, Russell S.

1. The red beds near the base of the Cherokee shales: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 2, pp. 350-351, March-April, 1925.

Tarr, William Arthur. See also Branson, 20; Twenhofel, 16, 18, 22, 29.

1. The barite deposits of Missouri: *Econ. Geology*, vol. 14, no. 1, pp. 46-67, 2 figs., January-February, 1919.
2. Contribution to the origin of dolomite (abstract): *Geol. Soc. America, Bull.*, vol. 30, p. 114, March 31, 1919.
3. The origin of glauconite (abstract): *Science, new ser.*, vol. 51, pp. 491-492, May 14, 1920.
4. The possibility of a relationship between crystal types and the mode of occurrence of minerals (abstract): *Science, new ser.*, vol. 51, p. 519, May 21, 1920.
5. Notes on concretions (abstract): *Science, new ser.*, vol. 51, p. 520, May 21, 1920.
6. A possible factor in the origin of dolomite (abstract): *Science, new ser.*, vol. 51, May 21, 1920.
7. *Tables for the determination of the common minerals and rocks*. Revised and enlarged, 1921. 32 pp., Columbia, Missouri, The Missouri Book Company, 1921.
8. The minerals of Madison County, Missouri: *Am. Mineralogist*, vol. 6, no. 1, pp. 7-10, January, 1921.
9. Cobalt-nickel-copper-lead deposits of Fredericktown, Missouri (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 66, March 31, 1921.
10. Syngenetic origin of concretions in shale: *Geol. Soc. America, Bull.*, vol. 32, no. 4, pp. 373-384, 2 figs., December 1, 1921; abstract with discussion, no. 1, pp. 26-27, March 31, 1921.
11. Cone-in-cone: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 199-213, 11 figs., September, 1922.
12. A high-temperature vein in Madison County, Missouri (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 99, March 30, 1923.
13. Intrenched and incised meanders of some streams on the northern slope of the Ozark Plateau in Missouri: *Jour. Geology*, vol. 32, no. 7, pp. 583-600, 8 figs., October-November, 1924.
14. Is the Chalk a chemical deposit?: *Geol. Mag.*, vol. 62, pp. 252-264, June, 1925.
15. The origin of chert and flint: *Univ. Missouri Studies*, vol. 1, no. 2, 46 pp., 3 figs., 8 pls., April 1, 1926.
16. Silicification of erosion surfaces (discussion): *Econ. Geology*, vol. 21, no. 5, pp. 511-513, August, 1926.

Tarr, William Arthur—Continued.

17. Origin of chert and flint (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 124, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 73, February, 1927.
18. Alternating deposition of pyrite, marcasite, and possibly melnikovite: *Am. Mineralogist*, vol. 12, no. 12, pp. 417–421, December, 1927.
19. Syngenetic pyritization in local reducing areas of Pennsylvanian shales in Missouri: *Jour. Geology*, vol. 36, no. 5, pp. 434–439, July–August, 1928; abstract, *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 163, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 73, February, 1928.
20. Cone-in-cone on concretions from the Devonian of New York: *Science*, new ser., vol. 68, p. 403, October 26, 1928.

Taschereau, R. H. See Dufresne, 9.

Tatum, J. L.

1. Cretaceous and Tertiary of southern Texas and northern Mexico: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 9, pp. 949–950, September, 1928.

Taylor, Frank B.

1. One-man surveys for the oil geologist: *Colorado School of Mines Mag.*, vol. 9, no. 10, pp. 269–272, 1 pl., October, 1919.

Taylor, Frank Bursley.

1. Some points in the mechanics of arcuate and lobate mountain structures (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 31–32, March 31, 1921.
2. An objection to the contraction hypothesis as accounting for mountains (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 33–34, March 31, 1921.
3. The lateral migration of land masses (abstract): *Washington Acad. Sci., Jour.*, vol. 13, no. 20, pp. 445–447, December 4, 1923.
4. Moraines of the St. Lawrence Valley: *Jour. Geology*, vol. 32, no. 8, pp. 641–667, 12 figs., 1 pl. (map), November–December, 1924.
5. Movement of continental masses under action of tidal forces: *Pan-Am. Geologist*, vol. 43, no. 1, pp. 15–50, 2 figs., 2 pls., February, 1925.
6. Reconnaissance of the recessional moraines of the Finger Lakes region (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 142, March 30, 1925.
7. Moraines of recession between Indiana and New England (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 172–173, March 30, 1925.
8. Relation of recessional moraines to Niagara Falls (abstract): *Pan-Am. Geologist*, vol. 44, no. 2, pp. 153–154, September, 1925.
9. Greater Asia and isostasy (abstract): *Pan-Am. Geologist*, vol. 44, no. 2, pp. 156–157, September, 1925.
10. Tidal forces in the making of continents and mountains (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 167–168, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 162, March, 1926.
11. Evidence of recurrent depression and resilience in the region of the Great Lakes: *Michigan Acad. Sci., Papers*, vol. 7, pp. 135–143, 1 fig., 1927.
12. The present and recent rate of land tilting in the region of the Great Lakes: *Michigan Acad. Sci., Papers*, vol. 7, pp. 145–157, 3 figs., 1927.

Taylor, Frank Bursley—Continued.

13. Salient points in Tertiary epeirogeny (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 107-109, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 65, February, 1927.
14. Relation of Lake Erie to recent and present land tilting (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 128, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 74, February, 1927.
15. Asia and North America—a comparison in Tertiary diastrophism (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 153-154, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 1, p. 68, February, 1928.
16. Bearing of distribution of earthquakes and volcanoes on their origin (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, p. 174, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 1, p. 78, February, 1928.
17. Sliding continents and tidal and rotational forces. In Theory of continental drift, pp. 158-177, 4 figs., Am. Assoc. Petroleum Geologists, 1928.
18. North America and Asia; a comparison in Tertiary diastrophism: Geol. Soc. America, Bull., vol. 39, no. 4, pp. 985-1000, 4 figs., December 30, 1928.
19. Bearing of distribution of earthquakes and volcanoes on their origin: Geol. Soc. America, Bull., vol. 39, no. 4, pp. 1001-1016, December 30, 1928.

Taylor, Thomas Garrett. See Moore, E. S., 6; Soyster, 1.

Teas, Livingston Pierson. See also Hull, 2.

1. Preliminary report on the sand and gravel deposits of Georgia: Georgia Geol. Survey, Bull. no. 37, 392 pp., 13 figs., 20 pls., map, 1921.
2. Haynesville field, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 1, pp. 53-54, January-February, 1922.
3. The Haynesville, Louisiana [oil] field: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, pp. 371-372, July-August, 1922.
4. New producing depths at El Dorado, Arkansas: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 5, pp. 473-474, September-October, 1922.
5. Differential compacting the cause of certain Claiborne dips [in the north Louisiana-south Arkansas district] (with discussion): Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 4, pp. 370-378, 6 figs., July-August, 1923.

Teetor, Paul.

1. Clay and shale resources in the vicinity of Arkansas City, Kansas: Kansas, State Geol. Survey, Bull. 8, pp. 38-47, 2 figs., 1921.

Tegland, Nellie M.

1. Genus *Thyasira* in Tertiary rocks of North America (abstract): Pan-Am. Geologist, vol. 49, no. 4, p. 317, May, 1928.

Teller, Mrs. Edgar E.

1. Memorial of Edgar E. Teller: Geol. Soc. America, Bull., vol. 35, no. 1, pp. 182-184, March 30, 1924.

Tello, Rafael M.

1. Informe sobre las perforaciones practicados en el rancho "La Candelaria," del Estado de Coahuila: Mexico, Inst. Geol., Anales, t. 2, nos. 6-10, pp. 195-197, 1 pl., 1927.

Templeton, R. R.

1. (and McCollom, C. R.). Santa Fe Springs field, California (with discussion): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 2, pp. 178-194, 1 fig., 1 pl., March-April, 1924.

Tenney, J. B.

1. The mineral industries of Arizona: *Arizona Bur. Mines, Bull.*, no. 125, 135 pp., February 15, 1928.

Termer, Franz.

1. Mitteilungen über die Vulkantätigkeit in Guatemala im Jahre 1927: *Zeitschr. Vulkanologie*, Bd. 11, H. 3, pp. 188-190, 1 pl., July, 1928.

Termier, Pierre.

1. Une visite au Grand Cañon du Colorado: *Revue Univ.*, t. 19, no. 17, pp. 553-569, December, 1924.
2. The drifting of the continents: *Smithsonian Inst., Ann. Rept.*, 1924, pp. 219-236, 1925.

Terrones Benitez, Alberto.

1. The camp of Guanacevi [Durango, Mexico]: *Eng. and Min. Jour.-Press*, vol. 114, no. 4, pp. 139-144, 7 figs., July 22, 1922.

Tester, A. C. See also Twenhofel, 22, 24.

1. Cone-in-cone in stratigraphic correlation (abstract): *Pan-Am. Geologist*, vol. 46, no. 5, p. 406, December, 1926.
2. The use of cone-in-cone structure for the purposes of correlation: *Iowa Acad. Sci., Proc.*, 1926, vol. 33, p. 218 [1927].
3. Comanchean fossils from the glacial drift of Iowa (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 233, March 30, 1927.

Texas, Attorney General.

1. (and others). [Suit to ascertain the boundary line between the State of Oklahoma and the State of Texas along Red River.] In the Supreme Court of the United States, October term, 1921. In Equity, Original No. 20. The State of Oklahoma, Complainant, *v.* the State of Texas, Defendant. Brief for Defendant . . . April 24, 1922. Part I, Statement of case and argument, 472 pp.; Part II, Abstract of the evidence, 766 pp. [Expert testimony by Robert T. Hill, pp. 255-343; by E. H. Sellards, pp. 353-434; by L. C. Glenn, pp. 577-641; by Isaiah Bowman, pp. 642-662].

Contains various data regarding the behavior of rivers, particularly the Red River, and the geologic and physiographic features of the Red River and its banks, more especially in the Big Bend region.

Thacker, Richard B.

1. Do all Gulf salt domes have vents?: *Eng. and Min. Jour.-Press*, vol. 121, no. 17, pp. 684-686, 4 figs., April 24, 1926.

Tharp, B. C. See Sellards, 18.

Tharp, William Edgar.

1. Notes on the areal geology of Hancock County: *Indiana Acad. Sci., Proc.*, vol. 35, pp. 91-92, 1926.
2. Notes on the areal geology of Miami County, Indiana: *Indiana Acad. Sci., Proc.*, vol. 36, pp. 117-118, 1927.

Theis, Charles Vernon. See also Kentucky G. S., 28, 38, 40.

1. Geological map of Hopkins County, Kentucky: *Kentucky Geol. Survey*, Ser. 6, 1924. Scale, 1:62,500.

Theis, Charles Vernon—Continued.

2. The filled valleys of western Kentucky (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, pp. 178-179, 1928; *Ohio Jour. Sci.*, vol. 28, no. 3, pp. 156-157, May, 1928.

Thiel, George A. See also Fairbanks, 12; Grout, 13.

1. Gas an important factor in oil accumulation: *Eng. and Min. Jour.*, vol. 109, pp. 888-889, 3 figs., April 10, 1920.
2. The manganese minerals; their identification and paragenesis: *Econ. Geology*, vol. 19, no. 2, pp. 107-145, 3 figs., 2 pls., March, 1924.
3. The precipitation of manganese from meteoric solutions: *Am. Jour. Sci.*, 5th ser., vol. 7, pp. 457-472, June, 1924.
4. High-temperature manganese veins of the Cuyuna range [Minnesota]: *Econ. Geology*, vol. 19, no. 4, pp. 377-381, June-July, 1924.
5. Iron sulphides in magnetic belts near the Cuyuna range: *Econ. Geology*, vol. 19, no. 5, pp. 466-472, 1 fig., August, 1924.
6. Study of polished surfaces: *Econ. Geology*, vol. 19, no. 6, pp. 582-584, September-October, 1924.
7. Commercial possibilities of the magnetite slates of the Cuyuna range [Minnesota]: *Eng. and Min. Jour.-Press*, vol. 118, no. 19, pp. 735-738, 7 figs., November 8, 1924.
8. Manganese precipitated by micro-organisms: *Econ. Geology*, vol. 20, no. 4, pp. 301-310, 2 pls., June-July, 1925.
9. Phosphorus iron ores in the Cuyuna Range [Minnesota]: *Eng. and Min. Jour.-Press*, vol. 121, no. 17, pp. 687-690, 4 figs., April 24, 1926.
10. The enrichment of bauxite deposits through the activity of microorganisms: *Econ. Geology*, vol. 22, no. 5, pp. 480-493, 2 figs., August, 1927.
11. The relative effectiveness of bacteria as agents of chemical denudation: *Jour. Geology*, vol. 35, no. 7, pp. 647-652, 2 figs., October-November, 1927.
12. Geology of the Cuyuna range: *Geol. Soc. America, Bull.*, vol. 38, no. 4, pp. 783-793, 5 figs., December 30, 1927; abstract, no. 1, p. 116, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 68, February, 1927.
13. A summary of the activity of bacterial agencies in sedimentation: *Nat. Research Council, Reprint and Circ. Ser.*, no. 85, pp. 61-77, 1928.

Thiessen, Reinhardt. See also Hackford, 1.

1. Occurrence and origin of finely disseminated sulphur compounds in coal: *Am. Inst. Min. and Met. Eng., Bull.* no. 153, pp. 2431-2444, 10 figs., September, 1919; *Trans.*, vol. 63, pp. 913-931, 10 figs., 1920; discussion, *Mining and Metallurgy*, no. 157, sec. 12, pp. 40-44, January, 1920; *Coal Age*, vol. 16, pp. 668-673, 10 figs., October 23, 1919.
2. Structure in Paleozoic bituminous coals: *U. S. Bur. Mines, Bull.* 117, 296 pp., 160 pls., 1920.
3. Compilation and composition of bituminous coals: *Jour. Geology*, vol. 28, no. 3, pp. 185-209, 9 pls., April-May, 1920.
4. The correlation of coal seams by means of spore exines (abstract): *Science*, new ser., vol. 51, p. 522, May 21, 1920.
5. Under the microscope coal has already lost much of its former mystery: *Coal Age*, vol. 18, nos. 24-26, pp. 1183-1189, 1223-1226, 1275-1279, 30 figs., December 9, 16, and 23, 1920; vol. 19, no. 1, pp. 12-15, 5 figs., January 6, 1921.

Thiessen, Reinhardt—Continued.

6. Recent developments in the microscopic study of coal: *Canadian Min. Jour.*, vol. 42, no. 4, pp. 64-68, no. 5, pp. 86-91, no. 6, pp. 109-113, no. 7, pp. 124-218, 31 figs., January 28-February 18, 1921.
7. Origin and composition of certain oil shales: *Econ. Geology*, vol. 16, nos. 4-5, pp. 289-300, 2 pls., 1921; abstract, with discussion by F. R. Van Horn, *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 72-74, March 31, 1921.
8. The origin and constitution of coal: *Wyoming Hist. and Geol. Soc., Proc. and Coll.*, vol. 19, preprint 44 pp. 21 pls., Wilkes-Barre, Pa., 1924.
9. (and Wilson, Ford E.). Correlation of coal beds of the Allegheny formation of western Pennsylvania and eastern Ohio: *Coal-mining Investigations, Bull.* 10, 56 pp., 6 figs., 23 pls., Carnegie Institute of Technology, Pittsburgh, Pennsylvania, 1924.
10. Microscopic examination of Kentucky oil shales: *Kentucky Geol. Survey*, ser. 6, vol. 21, pp. 1-47, 37 pls., 1925.
11. The microscopical constitution of coal: *Am. Inst. Min. and Met. Eng., Trans.* [preprint], no. 1438, 50 pp., March, 1925; with discussion, *Trans.*, vol. 71, pp. 35-116, 30 figs., 1925.
12. Origin of the boghead coals: *U. S. Geol. Survey, Prof. Paper* 132, pp. 121-135, 14 pls., May 14, 1925.
13. Classification of coal from the viewpoint of the paleobotanist (with discussion): *Am. Inst. Min. and Met. Eng., Tech. Pub.* no. 156, pp. 28-46, November, 1928.

Thom, William Taylor, jr. See also Foley, 1.

1. (and Moulton, G. F.). The Soap Creek oil field, Crow Indian Reservation, Montana: *U. S. Geol. Survey*, 15 pp., map, December 5, 1921. [Press Bulletin mimeograph.]
2. Relation of deep-seated faults to surface structure in the region northeast of the Yellowstone Park plateau (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 99, March 31, 1922.
3. (and Dobbin, C. E.). Oil and gas prospects in Garfield County, Montana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 2, pp. 144-150, 1 fig., March-April, 1922.
4. Oil and gas prospects in and near the Crow Indian Reservation, Montana: *U. S. Geol. Survey, Bull.* 736, pp. 35-53, 1 pl. (map), July 6, 1922.
5. Oil possibilities of South Dakota: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 6, pp. 551-553, November-December, 1922.
6. The relation of deep-seated faults to the surface structural features of central Montana: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 1, pp. 1-13, 2 figs., 1 pl., January-February, 1923.
7. (and Dobbin, C. E.). Correlation of the Lebo member of the Fort Union with Cannonball member of the Lance (abstract): *Washington Acad. Sci., Jour.*, vol. 14, no. 7, p. 165, April 4, 1924.
8. (and Dobbin, C. E.). Stratigraphy of Cretaceous-Eocene transition beds in eastern Montana and the Dakotas: *Geol. Soc. America, Bull.*, vol. 35, no. 3, pp. 481-505, 4 figs., 3 pls., September 30, 1924; abstract, no. 1, p. 98, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 148, March, 1924.
9. "Direct synthesis of higher from lower hydrocarbons": *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 6, pp. 830-831, November-December, 1924.

Thom, William Taylor, jr.—Continued.

10. Production and potentialities of the South's coal fields: The South's Development, Manufacturers Record, vol. 86, no. 24, pt. 2, pp. 297-303, December 11, 1924.
11. (and others). Structure map of northeastern Oklahoma, prepared by the Oklahoma Geological Survey in cooperation with the U. S. Geological Survey, 1925. Scale 1:500,000.
12. Moisture as a component of the volatile matter of coal: Am. Inst. Min. and Met. Eng., Trans. [preprint] no. 1451, 4 pp., May, 1925; with discussion, Trans., vol. 71, pp. 282-288, 1 fig., 1925; abstract, Mining and Metallurgy, vol. 7, no. 229, p. 26, January, 1926.
13. Relation of earth temperatures to buried hills and anticlinal folds: Econ. Geology, vol. 20, no. 6, pp. 524-530, 2 figs., September-October, 1925.
14. Topography and geology of the coal areas [of Missouri]: U. S., Bur. Mines, Tech. Paper 366, pp. 1-4, 1 fig., 1926.
15. Need for petroleum geology research: Oil and Gas Jour., vol. 24, no. 37, pp. 21, 143-144, February 4, 1926.
16. (and Dobbin, C. E.). Origin of the structural features of eastern Montana (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, p. 168, March 30, 1926.
17. Earth temperatures, buried hills, and anticlinal folds (discussion): Econ. Geology, vol. 22, no. 1, pp. 91-94, January-February, 1927.
18. Subsidence and earth movements caused by oil extraction or by drilling oil and gas wells (with discussion): Am. Inst. Min. and Met. Eng., Trans., vol. 75, pp. 734-742, 1927.
19. The Minturn district and the northwestern part of the Gillette field [Wyoming]: U. S. Geol. Survey, Bull. 796, pp. 50-64, 2 pls. (maps), August 8, 1927.
20. Synclinal oil occurrence and regional uplift: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 5, pp. 554-555, May, 1928.
21. Classification of coal from proximate analysis and calorific value (with discussion): Am. Inst. Min. and Met. Eng., Tech. Pub. no. 156, pp. 15-19, November, 1928.

Thomas, Abram Owen. See also Lees, 4.

1. Notes on the geology of Antigua: Iowa Univ., Studies, vol. 8, no. 3, pp. 213-219, May, 1919.
2. Echinoderms of the Iowa Devonian (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, pp. 211-212, March 31, 1920.
3. An illustration of the wedge work of roots: Iowa Acad. Sci., Proc., vol. 26, pp. 477-480, 1 fig. [1920].
4. A *Herpetocrinus* from the Silurian of Iowa: Iowa Acad. Sci., Proc. vol. 26, pp. 481-482, 1 fig. [1920].
5. The Independence shale near Brandon, Iowa: Iowa Acad. Sci., Proc., vol. 26, pp. 485-491 [1920].
6. A cephalopod from the coal measures at Mystic, Iowa (abstract): Science, new ser., vol. 54, pp. 308-309, September 30, 1921.
7. Note on a beaver tooth from the Pleistocene at Des Moines, Iowa (abstract): Science, new ser., vol. 54, p. 309, September 30, 1921.
8. Some Oligocene brachiopods from the Island of Antigua, British West Indies (abstract): Science, new ser., vol. 54, p. 309, September 30, 1921.

Thomas, Abram Owen--Continued.

9. Small fossils from the Lime Creek shales (abstract) : Geol. Soc. America, Bull., vol. 32, no. 1, pp. 130-131, March 31, 1921.
10. The geographic distribution of Iowa Devonian echinoderms (abstract) : Science, new ser., vol. 57, p. 147, August 24, 1923.
11. Some giant *Stromatopora* from near Iowa City, Iowa (abstract) : Science, new ser., vol. 57, p. 147, August 24, 1923.
12. Echinoderms of the Iowa Devonian: Iowa Geol. Survey, vol. 29, pp. 385-550, 21 figs., 20 pls. [1924].
13. Some new Paleozoic glass sponges from Iowa: Iowa Acad. Sci., Proc. 1922, vol. 29, pp. 85-90, 1 pl. [1924?].
14. (and Stainbrook, M. A.). Status of certain rhynchonellid brachiopods from the Devonian of Iowa: Iowa Acad. Sci., Proc. 1922, vol. 29, pp. 93-98, 2 figs., 1 pl. [1924?]; abstract, Science, new ser., vol. 54, p. 308, September 30, 1921.
15. Notes on some mammalian remains reported in Iowa during the past year (abstract) : Iowa Acad. Sci., Proc. 1922, vol. 29, p. 129 [1924?].
16. The geographic distribution of Iowa Devonian echinoderms: Iowa Acad. Sci., Proc., vol. 30, pp. 463-465 [1924].
17. Some large colonies of *Stromatopora* found near Iowa City, Iowa: Iowa Acad. Sci., Proc., vol. 30, pp. 467-470, 1 fig. [1924].
18. Some fossils from an outcrop in Des Moines: Iowa Acad. Sci., Proc., vol. 30, pp. 471-479, 2 pls. [1924].
19. Some Goniatites from the Paleozoics of Iowa (abstract) : Pan-Am. Geologist, vol. 42, no. 5, p. 381, December, 1924; Iowa Acad. Sci., Proc., vol. 31, p. 340 [1926?].
20. Pleistocene mammalian remains recently found in Iowa (abstract) : Pan-Am. Geologist, vol. 42, no. 5, pp. 381-382, December, 1924; Iowa Acad. Sci. Proc., vol. 31, p. 340 [1926?].
21. Fossil pine cone from drift of northern Iowa (abstract) : Pan-Am. Geologist, vol. 42, no. 5, p. 382, December, 1924; Iowa Acad. Sci., Proc., vol. 31, pp. 339-340 [1926?].
22. (and Ladd, H. S.). Additional cystoids and crinoids from the Maquoketa shale of Iowa: Iowa, Univ., Studies, new ser., no. 104, Studies in Natural History, vol. 11, no. 8, pp. 5-18, 6 pls., March 1, 1926.
23. Echinoderms of the Iowa Devonian (abstract) : Chicago, Univ., Abstracts of Theses, Sci. Ser., vol. 2, pp. 235-238, September, 1926.
24. A horntail trilobite from McGregor, Iowa: Iowa Acad. Sci., Proc., 1926, vol. 33, pp. 213-218, 1 pl. [1927].
25. The occurrence of the brachiopod *Bilobites bilobus* in the Silurian of Iowa: Iowa Acad. Sci., Proc., 1926, vol. 33, pp. 221-222, 1 fig. [1927].
26. Proboscidean remains from Red Oak and Ottumwa, Iowa (abstract) : Iowa Acad. Sci., Proc., 1926, vol. 33, pp. 222-223 [1927].

Thomas, C. S.

1. Oil, whence and whither?: Oil Bull., vol. 14, no. 4, pp. 382-383, April, 1928.

Thomas, Chester Reams. See also Barwick, 1.

1. Origin of anticline in Benton shale area of western Kansas: Oil and Gas Jour., vol. 23, no. 47, pp. 128-129, April 16, 1925.
2. Flank production of the Nemaha Mountains (granite ridge), Kansas: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 9, pp. 919-931, 5 figs., September, 1927.

Thomas, Chester Reams—Continued.

3. Permian fossils found in drill samples purported to be below the Welch chert from well in Dickinson County, Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 10, p. 1118-1120, October, 1927.

Thomas, E. T.

1. Craterlets in east central Arkansas probably due to the New Madrid earthquake: *Science, new ser.*, vol. 56, pp. 21-22, July 7, 1922.
2. The effect of pressure on the migration of oil: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 4, pp. 527-528, July-August, 1924.
3. An aid to the study of Foraminifera: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 3, pp. 667-669, May-June, 1925.

Thomas, Kirby.

1. Coal and oil in Rhode Island: *Coal Age*, vol. 15, p. 748, April 24, 1919.

Thomas, Norman L.

1. Brachiopods from the St. Clair limestone, Arkansas: *Denison Univ. Bull.* vol. 26, no. 6, *Sci. Lab., Jour.*, vol. 21, pp. 385-401, 1 pl., September, 1926.
2. The use of evolutionary changes in geologic correlation: *Jour. Paleontology*, vol. 1, no. 2, pp. 135-139, August, 1927.
3. (and Rice, E. M.). Changing characters in some Texas species of *Guembelina*: *Jour. Paleontology*, vol. 1, no. 2, pp. 141-144, 1 fig., August, 1927.
4. Some brachiopods from the St. Clair limestone, Arkansas: *Denison Univ. Bull.*, vol. 38, no. 8, *Sci. Lab., Jour.*, vol. 23, pp. 127-140, 1 pl., July, 1928.

Thompson, Arthur Perry.

1. Mineral deposition and the circle of fire: *Min. Jour.*, Phoenix, Ariz., vol. 10, no. 16, pp. 3-4, 18-21, January 15, 1927.

Thompson, David Grosh.

1. Ground water in Lanfair Valley, California: *U. S. Geol. Survey, Water-Supply Paper* 450, pp. 29-50, 2 pls. (maps), 1 fig., January 15, 1920.
2. Ground water for irrigation near Gage, Ellis County, Oklahoma: *U. S. Geol. Survey, Water-Supply Paper* 500, pp. 33-53, 3 figs., 1 pl., 1921, *Abstract, Washington Acad. Sci., Jour.*, vol. 12, no. 1, p. 20, January 4, 1922.
3. Pleistocene lakes along Mohave River, California (abstract): *Washington Acad. Sci., Jour.*, vol. 11, no. 17, pp. 423-424, October 19, 1921.
4. Memorandum on investigation of quantities of ground water available for public and industrial supplies in New Jersey; New Jersey, Report of the Water Policy Commission, Part 2, pp. (A) 29-40, February 27, 1926.
5. Ground-water problems on the barrier beaches of New Jersey: *Geol. Soc. America, Bull.*, vol. 37, no. 3, pp. 463-474, 5 figs., 1 pl., September 30, 1926; abstract, no. 1, pp. 161-162, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, p. 162, March, 1926.
6. Ground-water supplies of the Atlantic City region: New Jersey, Dept. Conserv. and Devel., *Bull.* 30, 138 pp., 23 figs., 7 pls., 1928.

Thompson, J. D., jr. See Malott, 2.

Thompson, Phillips.

1. The Mackenzie River basin: Eng. and Min. Jour., vol. 108, pp. 866-868, 1 fig., December 6, 1919.

Thompson, S. A.

1. (and Eichelberger, O. H.). Vinton salt dome, Calcasieu Parish, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 4, pp. 385-394, 2 figs., 2 pls., April, 1928.

Thompson, Wallace C. See also Hubbard, W. E., 1.

1. The Midway limestone of northeast Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 4, pp. 323-332, 2 figs., July-August, 1922.

Thompson, William.

1. Theory of vein formation: Mining and Metall., vol. 9, no. 262, p. 467, October, 1928.

Thomson, Ellis. See also Bell, J. M., 6; Parsons, A. L., 2; Walker, T. L., 5.

1. A mineralographic study of the pyrite group: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 32-39, 1 pl., 1921.
2. Mineralography: Canadian Min. Jour., vol. 43, no. 6, pp. 78-80, February 10, 1922.
3. The occurrence of tellurides in Ontario: Toronto, Univ., Studies, Geol. ser., no. 14, pp. 91-98, 1 pl., 1922.
4. Goudreau gold area, Michipicoten district, Ontario: Canada, Geol. Survey, Summ. Rept., 1921, pt. D, pp. 17-26, 3 figs., 1922.
5. Mineralography as an aid to milling: Am. Mineralogist, vol. 8, no. 6, pp. 99-104, 8 figs., June, 1923.
6. Ores of the Silver Islet mine [Lake Superior]: Econ. Geology, vol. 18, no. 5, pp. 516-517, August, 1923.
7. A mineralographic study of germanite: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 62-65, 1924.
8. The tellurides: Canadian Min. Jour., vol. 45, no. 49, pp. 1187-1190, 4 figs., December 5, 1924.
9. A reexamination of keweenawite: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 35-38, 1925.
10. Mineralographic notes on certain arsenides and sulpharsenides of cobalt, nickel, and iron: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 54-58, 1925.
11. Missinaibi map area [Michipicoten iron ranges, Ontario]: Canada, Geol. Survey, Mem. 147, pp. 143-161, 1926.
12. A mineralographic examination of cohenite from Ovifak, Greenland: Toronto, Univ., Studies, Geol. ser., no. 24, pp. 41-43, 1927.
13. Canadian localities for chalmersite: Toronto, Univ., Studies, Geol. ser., no. 24, pp. 44-46, 1927.
14. A new telluride occurrence in Quebec: Toronto, Univ., Studies, Geol. ser., no. 27, pp. 11-14, 2 pls., 1928.

Thomson, Francis Andrew.

1. Notes on the antimony deposits [of Idaho]: Idaho, Univ., School of Mines, vol. 14, Bull. no. 2, pp. 45-53, January, 1919.
2. First annual report of the secretary of the State Bureau of Mines and Geology for the period April 20th to December 31st, 1919. 16 pp., Moscow, Idaho, 1920.

Thomson, Francis Andrew—Continued.

3. (and Ballard, Samuel M.). Geology and gold resources of north central Idaho: Idaho Bur. Mines and Geology, Bull. no. 7, 127 pp., 15 figs., 27 pls. (incl. maps), 1924.
4. Gold veins of sundry areas in the Idaho batholith: Eng. and Min. Jour.-Press, vol. 118, no. 14, pp. 533-540, 10 figs., October 4, 1924.
5. Six years' work of the Idaho Bureau of Mines and Geology, 1919-1924: Idaho, Bur. Mines and Geology, Press Bull. no. 11, 8 pp., map, December, 1924.
6. (and McGonigle, Fritz). Zonal distribution of gold, silver, lead, and copper ores in Idaho: Eng. and Min. Jour.-Press, vol. 120, no. 6, pp. 216-218, 1 fig., August 8, 1925.

Thoreau, J.

1. Camp Bird compound veindike (discussion): Econ. Geology, vol. 21, no. 1, pp. 90-91, January-February, 1926.

Thorington, J. Monroe.

1. The Lyell and Freshfield glaciers, Canadian Rocky Mountains, 1926: Smithsonian Misc. Coll., vol. 78, no. 6, 8 pp., 12 pls., February 5, 1927.

Thornberry, Martin Harmon.

1. A treatise on Missouri clays, including production, occurrence, types, analyses, and softening points, with addenda: Missouri, Univ., School of Mines and Metallurgy, Bull., Technical ser., 69 pp., illus., February, 1925.

Thornbury, Delmar L.

1. California's redwood wonderland, Humboldt County [geology, chapter 7, pp. 43-50]. 167 pp., illus. [San Francisco, California, June, 1923].

Thorpe, Malcolm Rutherford.

1. Structural features of the Abajo Mountains, Utah: Am. Jour. Sci., 4th ser., vol. 48, pp. 379-389, 4 figs., November, 1919.
2. New species of Oligocene (White River) Felidae: Am. Jour. Sci., 4th ser., vol. 50, pp. 207-224, 10 figs., September, 1920.
3. John Day Promerycochoeri, with descriptions of five new species and one new subgenus: Am. Jour. Sci., 5th ser., vol. 1, no. 3, pp. 215-244, 6 figs., March, 1921.
4. *Leptauchenia* Leidy and *Cyclopidius* (*Pitheciustus*) Cope, with descriptions of new and little known forms in the Marsh collection: Am. Jour. Sci., 5th ser., vol. 1, pp. 405-419, 6 figs., May, 1921.
5. Two new fossil Carnivora: Am. Jour. Sci., 5th ser., vol. 1, pp. 477-483, 5 figs., June, 1921.
6. John Day Eporeodons, with description of new genera and species: Am. Jour. Sci., 5th ser., vol. 2, pp. 93-111, 16 figs., August, 1921.
7. Two new forms of *Agriochœrus*: Am. Jour. Sci., 5th ser., vol. 2, pp. 111-119, 4 figs., August, 1921.
8. A newly mounted *Eporeodon* [from Scott's Bluff, Nebraska]: Am. Jour. Sci., 5th ser., vol. 2, pp. 309-312, 4 figs., December, 1921.
9. A new *Merycoidodon*: Am. Jour. Sci., 5th ser., vol. 2, pp. 334-342, 2 figs., December, 1921.
10. A new generic name for *Pliocyon marshi* [*Aracocyon marshi*]: Am. Jour. Sci., 5th ser., vol. 3, p. 97, January, 1922.
11. Oregon Tertiary Canidae, with descriptions of new forms: Am. Jour. Sci., 5th ser., vol. 3, pp. 162-176, 5 figs., March, 1922.

Thorpe, Malcolm Rutherford—Continued.

12. A new genus of Oligocene Hyaenodontidae [*Neohyaenodon*]: Am. Jour. Sci., 5th ser., vol. 3, pp. 277–287, 2 figs., April, 1922.
13. *Araeocyon*, a probable Old World migrant: Am. Jour. Sci., 5th ser., vol. 3, pp. 371–377, May, 1922. Abstract, Geol. Soc. America, Bull., vol. 33, no. 1, pp. 214–215, March 31, 1922.
14. Some Tertiary Carnivora in the Marsh collection, with descriptions of new forms: Am. Jour. Sci., 5th ser., vol. 3, pp. 423–455, 13 figs., June, 1922.
15. Primitive and carnivore-like characters of the Merycoidodontidae (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 212–213, March 31, 1922.
16. Restoration of *Eporeodon socialis* Marsh (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, pp. 213–214, March 31, 1922.
17. Notes on the Bridger (Eocene) Carnivora: Am. Jour. Sci., 5th ser., vol. 5, pp. 23–39, January, 1923.
18. New species of Uinta Carnivora from White River, Utah: Am. Jour. Sci., 5th ser., vol. 5, pp. 218–224, 4 figs., March, 1923.
19. The hyoid apparatus of *Merycoidodon*: Am. Jour. Sci., 5th ser., vol. 5, pp. 225–228, 1 fig., March, 1923.
20. New reconstructions in the Yale Peabody Museum: Am. Jour. Sci., 5th ser., vol. 6, pp. 91–99, 6 pls., August, 1923.
21. The primitive and carnivore-like characters of the Merycoidodontidae: Am. Jour. Sci., 5th ser., vol. 6, pp. 239–246, September, 1923.
22. The generic distinctions between *Merycochoerus* Leidy and *Promerycochoerus* Douglass: Am. Jour. Sci., 5th ser., vol. 7, pp. 121–131, February, 1924.
23. White River (Oligocene) Eporeodons: Am. Jour. Sci., 5th ser., vol. 7, pp. 219–226, March, 1924.
24. Additional notes on *Oreodontoides oregonensis* Thorpe: Am. Jour. Sci., 5th ser., vol. 7, pp. 316–318, 3 figs., April, 1924.
25. A new species of extinct peccary from Oregon: Am. Jour. Sci., 5th ser., vol. 7, pp. 393–397, 4 figs., May, 1924.
26. The geological history of the Oreodonts: Jour. Mammalogy, vol. 6, no. 2, pp. 69–82, 5 figs., 2 pls., May, 1925.

Thurmond, F. LeRoi.

1. Is there a Canyon Diablo meteorite?: Eng. and Min. Jour., vol. 122, no. 21, pp. 817–818, 3 figs., November 20, 1926.

Thurston, A. W.

1. Correlations of well drillings in northern Illinois with outcroppings of early Paleozoic beds in Wisconsin: Illinois State Acad. Sci., Trans., vol. 16, pp. 342–346, 1923.

Thurston, L. A. See Jaggar, 6.

Thwaites, Fredrik Turville. See also Twenhofel, 4.

1. A glacial gravel seam in limestone at Ripon, Wisconsin: Jour. Geology, vol. 29, no. 1, pp. 57–65, 7 figs., January–February, 1921.
2. (and Twenhofel, W. H.). Windrow formation; an upland gravel formation of the driftless and adjacent areas of the upper Mississippi Valley: Geol. Soc. America, Bull., vol. 32, no. 2, pp. 293–314, 1 fig., June 30, 1921; abstract, vol. 31, no. 1, p. 133, March 31, 1920.

Thwaites, Fredrik Turville—Continued.

3. The Paleozoic rocks found in deep wells in Wisconsin and northern Illinois: *Jour. Geology*, vol. 31, no. 7, pp. 529-555, 2 figs., October-November, 1923; abstract, *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 73, March 30, 1923.
4. Development of the theory of multiple glaciation in North America (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 182-183, March 30, 1926.
5. The origin and significance of pitted outwash: *Jour. Geology*, vol. 34, no. 4, pp. 308-319, 3 figs., May-June, 1926.
6. The development of the theory of multiple glaciation in North America: *Wisconsin Acad. Sci., Trans.*, vol. 23, pp. 41-164, 1927.
7. Stratigraphy and geologic structure of northern Illinois with special reference to underground water supplies: *Illinois State Geol. Survey, Rept. of Investigations* no. 13, 49 pp., 2 figs. (incl. map.), 2 pls., 1927.
8. Pre-Wisconsin terraces of the Driftless Area of Wisconsin: *Geol. Soc. America, Bull.*, vol. 39, no. 2, pp. 621-641, 6 figs., June, 1928; abstract, no. 1, p. 219, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 148, March, 1928.

Tickell, F. C.

1. The correlative value of the heavy minerals: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 2, pp. 158-168, 12 figs., March-April, 1924.

Tideswell, F. V.

1. (and Wheeler, R. V.). The constitution of coal: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1429, 7 pp., March, 1925; with discussion, *Trans.*, vol. 71, pp. 176-183, 1925.

Tieje, Arthur Jerrold.

1. Underground waters of parts of Lincoln and Crowley counties: *Colorado Geol. Survey, Bull.* 26, pp. 9-15, 1921.
2. Suggestions as to the description and naming of sedimentary rocks: *Jour. Geology*, vol. 29, no. 7, pp. 650-666, October-November, 1921.
3. The red beds of the Front Range in Colorado; a study in sedimentation: *Jour. Geology*, vol. 31, no. 3, pp. 192-207, April-May, 1923.
4. New earliest known vertebrates (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, p. 162, March 30, 1924.
5. The Pliocene and Pleistocene history of Baldwin Hills [California]: *Min. and Oil Bull.*, vol. 10, no. 11, p. 1132, 2 figs., November, 1924.
6. The Pliocene and Pleistocene history of the Baldwin Hills, Los Angeles County, California: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 5, pp. 502-512, May, 1926.
7. Microfauna of the uppermost Pliocene or lowermost Pleistocene in the Los Angeles Basin, California (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 234, March, 1927; *Pan-Am. Geologist*, vol. 47, no. 3, pp. 237-238, April, 1927.

Tilley, Cecil E.

1. A publication for geological abstracts: *Econ. Geology*, vol. 14, no. 7, pp. 570-572, November, 1919.

Tillyard, Robin John.

1. The lower Permian insects of Kansas; preliminary announcement: *Entomological News*, vol. 34, pp. 292-295, December, 1923.

Tillyard, Robin John—Continued.

2. Description of a new paleodictyopterid [from Permian of Kansas]: Am. Jour. Sci., 5th ser., vol. 7, pp. 203–207, 1 fig., 2 pls., March, 1924.
3. Kansas Permian insects; Part 3, The new order Protohymenoptera: Am. Jour. Sci., 5th ser., vol. 8, pp. 113–122, 5 figs., 1 pl., August, 1924.
4. Kansas Permian insects; Part 4, The order Paleodictyoptera: Am. Jour. Sci., 5th ser., vol. 9, pp. 328–335, 3 figs., April, 1925.
5. Kansas Permian insects; Part 5, The orders Protodonata and Odonata: Am. Jour. Sci., 5th ser., vol. 10, pp. 41–73, 14 figs., July, 1925.
6. Kansas Permian insects; Part 6, Additions to the orders Protohymenoptera and Odonata: Am. Jour. Sci., 5th ser., vol. 11, pp. 58–73, 9 figs., January, 1926.
7. Kansas Permian insects; Part 7, The order Mecoptera: Am. Jour. Sci., 5th ser., vol. 11, pp. 133–164, 19 figs., February, 1926.
8. Kansas Permian insects; Part 8, The order Copeognatha: Am. Jour. Sci., 5th ser., vol. 11, pp. 315–349, 19 figs., April, 1926.
9. Kansas Permian insects; Part 9, The order Hemiptera: Am. Jour. Sci., 5th ser., vol. 11, pp. 381–395, 7 figs., May, 1926.
10. Kansas Permian insects; Part 10, The new order Protoperlaria; a study of the typical genus *Lemmatophora* Sellards; Part 11, Order Protoperlaria; family Lemmatophoridae: Am. Jour. Sci., 5th ser., vol. 16, pp. 185–220, 19 figs., September, pp. 313–348, 22 figs., October, 1928.
11. Kansas Permian insects, Part 12, The family Delopteridæ, with a discussion of its ordinal position: Am. Jour. Sci., 5th ser., vol. 16, pp. 469–484, 11 figs., December, 1928.

Tilton, John Littlefield, 1863–1930. See also Gow, 1.

1. The Thurman-Wilson fault through southwestern Iowa, and its bearings: Jour. Geology, vol. 27, no. 5, pp. 383–390, 4 figs., July–August, 1919.
2. Geology of Clarke County: Iowa Geol. Survey, vol. 27, pp. 105–169, 4 figs., map [1920].
3. Geology of Cass County Iowa Geol. Survey, vol. 27, pp. 171–176, 15 figs., 1 pl., map [1920].
4. Note on conditions at the head of flood plains: Iowa Acad. Sci., Proc., vol. 26, p. 391 [1920].
5. Strata near Stuart, Iowa: Geol. Soc. America, Bull., vol. 33, no. 4, pp. 689–702, 3 figs., November 2, 1922; abstract, no. 1, p. 153, March 31, 1922.
6. Observations on coal swamps in northern West Virginia where Permian conditions prevail (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 72, March 30, 1923.
7. The Missouri series of the Pennsylvanian system in southwestern Iowa: Iowa Geol. Survey, vol. 29, pp. 223–313, 17 figs., 9 pls. (incl. maps) [1924].
8. Cross section of the Permian in West Virginia (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 220, March 30, 1925.
9. The definition of loess: Science, new ser., vol. 62, p. 83, July 24, 1925.
10. Permian vertebrates from West Virginia: Geol. Soc. America, Bull., vol. 37, no. 2, pp. 385–395, 2 figs., 1 pl., June 30, 1926; abstract, no. 1, p. 238, March 30, 1926.
11. Local conditions at a Mississippian disconformity: West Virginia Acad. Sci., Proc., vol. 1, no. 1 (W. Va. Univ. Bull., ser. no. 27, no. 1), pp. 74–80, 7 figs., August, 1926.

Tilton, John Littlefield—Continued.

12. The Permian of West Virginia as a field of research (abstract). West Virginia Acad. Sci., Proc., vol. 1, no. 1 (W. Va. Univ. Bull., ser. no. 27, no. 1, p. 128, August, 1926.
13. Structure and scenery in West Virginia (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 217, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 4, pp. 318-319, April, 1927.
14. (and Prouty, William F., and Price, Paul H.). Pendleton County: West Virginia Geol. Survey, [County reports], 384 pp., 25 figs., 80 pls., 2 maps (in atlas), 1927.
15. (and Prouty, William F., Tucker, R. C., and Price, Paul H.). Hampshire and Hardy counties: West Virginia Geol. Survey, [County reports], 624 pp., 19 figs., 78 pls., 4 maps (in atlas), 1927.
16. History of the development of the department of geology at West Virginia University (abstract): West Virginia Acad. Sci., Proc., vol. 2 (W. Va. Univ. Bull., ser. no. 29, no. 1), pp. 137-139, August, 1928.
17. Scenic geology in West Virginia: West Virginia Acad. Sci., Proc., vol. 2 (W. Va. Univ. Bull., ser. no. 29, no. 1), pp. 140-144, August, 1928.
18. Two illustrations of wind action in West Virginia: West Virginia Acad. Sci., Proc., vol. 2 (W. Va. Univ. Bull., ser. no. 29, no. 1), pp. 145-150, 3 figs., August, 1928.

Timm, W. B.

1. (and Robinson, A. H. A.). The gold fields of western Quebec: Canada, Mines Branch, Investigations of mineral resources and the mining industry, 1924, pp. 55-61, 1926. The gold ores of northwestern Quebec: Canadian Min. Jour., vol. 46, no. 8, pp. 194-197, February 20, 1925.

Tingley, Richard Hoadley.

1. Alunite and its products: Eng. and Min. Jour.-Press, vol. 115, no. 11, pp. 494-497, 5 figs., March 17, 1923.

Todd, E. W.

1. The estimation of niobium, tantalum, and titanium in minerals: Toronto, Univ., Studies, Geol. ser., no. 16, pp. 40-45, 1923.
2. The quartz spectrograph in mineral analysis: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 66-68, 1 pl., 1924.
3. Kenogamissi Lake area including townships of Denton and Keefer: Ontario Dept. Mines, 32d Ann. Rept., vol. 32, pt. 3, pp. 23-35, 2 figs., 2 pls., map, 1924.
4. Groundhog River area: Ontario Dept. Mines, 33d Ann. Rept., vol. 33, pt. 6, pp. 1-17, illus., 1925.
5. The Matabitchuan area, districts of Timiskaming and Nipissing: Ontario Dept. Mines, 34th Ann. Rept., vol. 34, pt. 3, 38 pp., illus., map, 1925; extract, Canadian Min. Jour., vol. 47, no. 6, pp. 139-142, 1 fig., February 5, 1926.
6. Gowganda vein minerals: Ontario Dept. Mines, 35th Ann. Rept., vol. 35, pt. 3, pp. 62-78, 11 figs., 1926.
7. Anima-Nipissing Lake area: Ontario Dept. Mines, 35th Ann., Rept., vol. 35, pt. 3, pp. 79-104, 7 figs., map, 1926.
8. Kirkland Lake gold area: Ontario Dept. Mines, 37th Ann. Rept., vol. 37, pt. 2, 176 pp., illus. (incl. maps), 1928.

Todd, James Edward, 1846-1922.

1. Certain diverse interpretations of Pleistocene in the Dakotas (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, pp. 134-135, March 31, 1920.
2. Aqueous loess (abstract): Kansas Acad. Sci., Trans., vol. 29, pp. 115-116, 1920.
3. Lacustrine beds near Atchison (abstract): Kansas Acad. Sci., Trans., vol. 29, pp. 116-117, 1920.
4. More evidence that Platte River, Nebraska, formerly connected with Grand River, Missouri: Kansas Acad. Sci., Trans., vol. 30, pp. 179-182, 1922.
5. Is the channel of the Missouri River through North Dakota of Tertiary origin?: Geol. Soc. America, Bull., vol. 34, no. 3, pp. 469-493, 6 figs., September 30, 1923; abstract, vol. 33, no. 1, pp. 120-121, March 31, 1922.
6. Glacial diversion of the Missouri River: Pan-Am. Geologist, vol. 39, no. 3, pp. 169-184, April, 1923.

Toepelman, Walter Carl.

1. Paleontology of the [Badlands] area: South Dakota Geol. and Nat. Hist. Survey, Bull. 11, pp. 61-73, August, 1922.
2. The possibilities of oil in eastern Harding County: South Dakota Geol. and Nat. Hist. Survey, Circular 12, 12 pp., 3 figs., March, 1923.
3. Underground water resources of parts of Crowley and Otero counties: Colorado Geol. Survey, Bull. 27, pt. 2, pp. 59-72, map, 1924.
4. Notes on the Laramie formation in central Weld County, Colorado: Jour. Geology, vol. 34, no. 8, pp. 834-835, November-December, 1926.
5. The geology of a portion of the Slim Buttes region of northwestern South Dakota, with special reference to unusual structural features due to slumping (abstract): Chicago, Univ., Abstracts of Theses, Sci., Ser., vol. 4, pp. 227-234, May, 1928.

Tolmachoff, Innokenti Pavlovich.

1. Note on the Devonian fauna of Ellesmere Land: Am. Jour. Sci., 5th ser., vol. 11, pp. 47-55, January, 1926.
2. On the fossil faunas from Per Schei's Series D from Ellesmere Land with exception of brachiopods, corals, and cephalopods: Second Norwegian Arctic Expedition in the *Fram* 1898-1902, Report (published by Norske Videnskaps-Akademi i Oslo), no. 38, 106 pp., 8 pls., 1926.
3. Note on the extinction of the mammoth in Siberia: Am. Jour. Sci., 5th ser., vol. 14, pp. 66-69, July, 1927.
4. Note on the discovery of the Champlain fauna on Lake St. John, Quebec, Canada: Canadian Field-Naturalist, vol. 41, no. 6, pp. 123-125, 4 figs., September, 1927.
5. Extinction and extermination: Geol. Soc. America, Bull., vol. 39, no. 4, pp. 1131-1148, December 30, 1928; abstract, no. 1, pp. 293-294, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 3, p. 229, April, 1928.

Tolman, C. F. See also Becking, 1.

1. Summary of progress in the microscopic study of the siliceous shales (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 196-197, March 30, 1927.
2. Biogenesis of hydrocarbons by diatoms: Econ. Geology, vol. 22, no. 5, pp. 454-474, 1 fig., 5 pls., August, 1927.

Tomlinson, Charles Weldon. See also Collingwood, 1; Moore, R. C., 17.

1. (and Storm, Willis). The Graham field, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 5, pp. 593-620, 10 figs., September-October, 1924.
2. Buried hills near Mannsville, Oklahoma: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 2, pp. 138-143, 3 figs., February, 1926.
3. Pennsylvanian system in the Ardmore Basin [Oklahoma] (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 156, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, pp. 154-155, March, 1927.
4. Oil and gas geology of Carter County: Oklahoma Geol. Survey, Bull. no. 40-Z, 78 pp., 15 figs., 3 pls. (incl. map), September, 1928.

Includes contributions by John R. Bunn, Sam H. Woods and J. P. McKee, Geo. E. Burton, A. M. Meyer, Bruce Harlton, and Sidney Powers.

Tondorff, Francis Anthony, 1870-1930.

1. The registration of earthquakes at the Georgetown University [District of Columbia] Station . . . January 1, 1916, to January 1, 1917: Georgetown Univ., Seismographic Station, Bull. no. 1, 23 pp., January 1, 1917.
2. The registration of earthquakes at the Georgetown University [District of Columbia] Station . . . January 1, 1917, to January 1, 1918: Georgetown Univ., Seismographic Station, Bull. no. 2, 30 pp., January 1, 1918.
3. The registration of earthquakes at the Georgetown University [District of Columbia] Station . . . January 1, 1918, to January 1, 1919: Georgetown Univ., Seismographic Station, Bull. no. 3, 31 pp., January 1, 1919.
4. The registration of earthquakes at the Georgetown University [District of Columbia] Station . . . January 1, 1919, to January 1, 1920: Georgetown Univ., Seismographic Station, Bull. no. 4, 25 pp., January 1, 1920.
5. The registration of earthquakes at the Georgetown University [District of Columbia] Station . . . January 1, 1920, to January 1, 1921: Georgetown Univ., Seismographic Station, Bull. no. 5, 25 pp., April 1, 1921.
6. The registration of earthquakes and press dispatches on earthquakes from January 1, 1921, to January 1, 1922: Georgetown [District of Columbia] Univ. Pub., 18th ser., no. 3, 24 pp., Washington, D. C., March, 1922.
7. How the earth telegraphed its Tokyo quake to Washington: Nat. Geog. Mag., vol. 44, no. 4, pp. 453-454, 1 pl., October, 1923.
8. Enhancing the value of the seismogram: Nat. Research Council, Bull., no. 53 (vol. 10, pt. 3), pp. 46-48, July, 1925.
9. Seismology, a retrospect: Washington Acad. Sci., Jour., vol. 16, no. 9, pp. 233-240, 2 figs., May 4, 1926.

Torres, Lidio A.

1. Configuración hipotética de la región petrolífera del Pánuco en el horizonte de las calizas Tamasopo: Bol. petróleo, vol. 22, no. 2, pp. 83-104, 3 pls., August, 1926.
2. Breve discusión sobre las teorías del origen del petróleo: Bol. petróleo, vol. 24, no. 6, pp. 649-654, December, 1927.

Torrey, Paul D.

1. (and Fralich, Charles D.). An experimental study of the origin of salt domes: *Jour. Geology*, vol. 34, no. 3, pp. 224-234, 10 figs., April-May, 1926.
2. Oil-field waters of the Bradford pool [Pennsylvania]: *Am. Inst. Min. and Met. Eng., Tech. Pub. no. 38*, 15 pp., 4 figs., December, 1927; *Oil and Gas Jour.*, vol. 26, no. 40, pp. 155, 157-158, 161-162, 3 figs., February 23, 1928.
3. Some factors influencing production of oil by flooding in the Bradford and Allegany fields [Pennsylvania]: *Am. Inst. Min. and Met. Eng., Tech. Pub. no. 39*, 24 pp., 11 figs., December, 1927.
4. Geologic factors in water flooding: *Oil and Gas Jour.*, vol. 26, no. 52, pp. 66, 111-112, 115-116, May 17, 1928.
5. Some geological factors influencing the recovery of oil by flooding. *Am. Petroleum Inst., Devel. and Prod. Eng. Bull. no. 202*, pp. 144-148, September, 1928.

Torrey, Ray Ethan.

1. The comparative anatomy and phylogeny of the Coniferales; part 3, Mesozoic and Tertiary coniferous woods: *Boston Soc. Nat. Hist., Mem.*, vol. 6, no. 2, pp. 39-106, 1 fig., 8 pls., April, 1923.

Tough, Frederick B.

1. (and Williston, Samuel H., and Savage, T. E.). Experiments in water control in the Flat Rock pool, Crawford County: *Illinois State Geol. Survey, Bull. no. 40*, pp. 97-140, 3 pls. (maps), 18 figs., 1919.

Tovote, William L., 1872-1919.

1. The copper industry of the Southwest: *Min. Mag.*, vol. 20, no. 5, pp. 267-275, 339-350, 6 figs., May and June, 1919.
2. Certain ore deposits of the Southwest (with discussion): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 61, pp. 42-59, 1920.

Townley, Sidney D.

1. Earthquakes on the Pacific coast of North America: *Seismol. Soc. America, Bull.*, vol. 9, no. 3, pp. 72-85, September, 1919.
2. John Casper Branner: *Seismol. Soc. America, Bull.*, vol. 12, no. 1, pp. 1-11, portr., March, 1922.

Trager, Earl A. See also Aurin, 2; Cushman, 16.

1. A laboratory method for the examination of well cuttings: *Econ. Geology*, vol. 15, no. 2, pp. 170-176, 1 fig., March, 1920.
2. A résumé of the oil-shale industry, with an outline of methods of distillation: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 4, no. 1, pp. 59-71, 6 figs., 1920.
3. Underground stratigraphic characteristics of eastern Oklahoma: *Am. Jour. Sci.*, 5th ser., vol. 5, pp. 140-146, February, 1923.
4. Kerogen and its relation to the origin of oil: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 3, pp. 301-311, 4 figs., 3 pls., May-June, 1924.
5. The geologic history of the Panuco River valley and its relation to the origin and accumulation of oil in Mexico: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 7, pp. 667-696, 7 figs., 3 pls., July, 1926; [in Spanish], *Bol. petróleo*, vol. 22, no. 4, pp. 243-260, 9 pls., October, 1926.

Trainer, David W., jr. See also Nevin, 2.

1. The geology of molding sand deposits: Am. Foundrymen's Assoc., Trans., vol. 33, pp. 797-807, 1926; also Reprint no. 428.
2. The molding sands of Maryland: Maryland Geol. Survey, vol. 12, pp. 27-89, 1 fig., 1928.
3. Molding sands of Wisconsin: Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 69, 103 pp., 15 figs., 5 tables, 1928.

Trask, Parker Davies.

1. A study of the fauna and stratigraphy of the Briones formation of middle California (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 145-146, March 31, 1921.
2. The Briones formation of middle California: California, Univ., Dept. Geol. Sci., Bull., vol. 13, no. 5, pp. 133-174, 8 pls., May 10, 1922.
3. Unique garnet sand forming along the beach at the mouth of the Sur River, Monterey County, California (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, p. 165, March 30, 1924.
4. Origin of the Santa Lucia coast range, California (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 151, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, pp. 149-150, March, 1925.
5. Geology of Point Sur quadrangle, California: California, Univ., Dept. Geol. Sci., Bull., vol. 16, no. 6, pp. 119-186, 2 figs., 1 pl., map, November 10, 1926.
6. (and Mather, Kirtley F.). Stratigraphy of the Lake Ainslie region, Cape Breton Island, Nova Scotia (abstract): Washington Acad. Sci., Jour., vol. 17, no. 12, pp. 322-324, June 19, 1927.
7. Oceanography and oil deposits: Nat. Research Council, Bull. no. 61, pp. 235-240, 2 figs., July, 1927.
8. Results of distillation and other studies of the organic nature of some modern sediments: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 11, pp. 1221-1230, November, 1927.
9. Limestones as a source of oil: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 5, pp. 556-557, May, 1928.
10. The potential value of several recent American coastal and inland deposits as future source beds of petroleum: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 11, pp. 1057-1068, November, 1928.

Treasher, Ray C.

1. Origin of the loess of the Palouse region, Washington: Science, new ser., vol. 61, p. 469, May 1, 1925.
2. A binocular magnifier for the determination of opaque minerals: Science, new ser., vol. 64, pp. 332-333, October 1, 1926.
3. Stratigraphic aspects of loess of Palouse region: Pan-Am. Geologist, vol. 46, no. 4, pp. 305-314, 2 pls., November, 1926.

Trechmann, C. T.

1. The Cretaceous and Tertiary question in Jamaica: Geol. Mag., vol. 59, pp. 422-431, 3 figs., September, 1922.
2. The *Barrettia* beds of Jamaica: Geol. Mag., vol. 59, pp. 501-514, 1 fig., 3 pls., November, 1922.
3. The Yellow limestone of Jamaica and its Mollusca: Geol. Mag., vol. 60, no. 710, pp. 337-367, 5 pls., August, 1923.
4. The carbonaceous shale or Richmond formation of Jamaica: Geol. Mag., vol. 61, no. 1, pp. 2-19, 2 pls., January, 1924.
5. The Cretaceous limestones of Jamaica and their Mollusca: Geol. Mag., vol. 61, no. 9, pp. 385-410, 1 fig., 4 pls., September, 1924.

Trechmann, C. T.—Continued.

6. The Scotland beds of Barbados: *Geol. Mag.*, vol. 62, pp. 481-504, 4 pls., November, 1925.
7. The Northern Range of Trinidad: *Geol. Mag.*, vol. 62, pp. 544-551, 1 pl., December, 1925.
8. The Cretaceous shales of Jamaica: *Geol. Mag.*, vol. 64, pp. 27-41, 49-65, 3 figs., 4 pls., January and February, 1927.

Trelease, William.

1. Bearing of the distribution of the existing flora of Central America and the Antilles on former land connections: *Geol. Soc. America, Bull.*, vol. 29, no. 4, pp. 649-656, December 30, 1918.
2. The American oaks: *Nat. Acad. Sci., Mem.*, vol. 20, 255 pp., 7 figs., 420 pls., 1924.

Includes sections on the geologic history and evolution of the oaks.

Trimble, K. W. See Miser, 13.

Trischka, Carl.

1. Asbestos and the Arizona industry: *Eng. and Min. Jour.*, vol. 124, no. 9, pp. 337-340, 5 figs., August 27, 1927.
2. The silica outcrops of the Warren mining district, Arizona: *Eng. and Min. Jour.*, vol. 125, no. 26, pp. 1045-1050, 7 figs., June 30, 1928.

Tristán, J. Fidel.

1. Recent eruptions of Poás Volcano in Costa Rica: *Zeitschr. Vulkanologie*, Bd. 2, H. 3, pp. 140-146, 7 pls., January, 1916.
2. (and Fernández Peralta, Ricardo). Informe presentado al Señor Ministro de Instrucción Pública sobre la actividad del volcán Irazú. Colegio de Señoritas, Publicaciones, Serie A, no. 1, 1917 [not seen]. *La Gaceta, Diario Oficial*, año 39, no. 130, pp. 662-664, 6 figs., San José, Costa Rica, December 4, 1917.
3. The activity of the volcano Irazú in Costa Rica: *Zeitschr. Vulkanologie*, Bd. 7, H. 2, pp. 93-104, 1 fig., 9 pls., July, 1923.

Trivelli, A. P. H. See Fairbanks, 12.

Troedsson, Gustaf T.

1. Modern ideas on American stratigraphy and paleogeography: *New York State Mus. Bull.*, no 260, pp. 117-126, 1925.
2. On the middle and upper Ordovician faunas of northern Greenland; I, Cephalopods: *Jubilaeumsekspeditionen Nord om Groenland, 1920-23, Nr. 1 (Saertryk af Meddelelser om Groenland, LXXI)*, 157 pp., 17 figs., 65 pls., 1926. Also issued as *Communications paléontologiques* no. 25 of the *Muséum de minéralogie et de géologie de l'Université de Copenhague*, 1926.
3. Charles D. Walcott: *Geol. Fören. Stockholm, Förh.*, Bd. 49, H. 2, pp. 290-292, portr., March-April, 1927.

Trowbridge, Arthur Carleton. See also Twenhofel, 16, 18.

1. The erosional history of the Driftless Area: *Iowa, Univ., Studies*, 1st ser., no. 40, *Studies in Natural History*, vol. 9, no. 3, 127 pp., 35 figs., January 1, 1921.
2. The existing stage of erosion in the United States (abstract): *Science*, new ser., vol. 54, p. 307, September 30, 1921.
3. (and Lonsdale, J. T.). Some north-south topographic profiles in the United States (abstract): *Science*, new ser., vol. 54, pp. 307-308, September 30, 1921.

Trowbridge, Arthur Carleton—Continued.

4. (and Glock, W. S.). Quantitative study of the derivation of North American Algonkian sediments (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 108, March 31, 1922.
5. A geologic reconnaissance in the Gulf Coastal Plain of Texas near the Rio Grande: U. S. Geol. Survey, Prof. Paper 131, pp. 85-107, 1 pl. (map), February 12, 1923.
6. Tertiary stratigraphy in the lower Rio Grande region (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 75, March 30, 1923.
7. Sedimentation at the mouths of the Mississippi River—preliminary report (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 95, March 30, 1923.
8. The status of sedimentation in Iowa (abstract): Iowa Acad. Sci., Proc. 1922, vol. 29, p. 127 [1924].
9. Reynosa formation in southwest Texas (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, pp. 164-165, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, pp. 154-155, March, 1925.
10. (and Mortimore, Morris E.). Correlation of oil sands by sedimentary analysis: Econ. Geology, vol. 20, no. 5, pp. 409-423, 10 figs., 2 pls., August, 1925.
11. Reynosa formation in lower Rio Grande region, Texas: Geol. Soc. America, Bull., vol. 37, no. 3, pp. 455-462, 3 figs., September 30, 1926.
12. Disposal of sediments carried to the Gulf of Mexico by Southwest Pass, Mississippi River (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 148, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 152, March, 1927.

Troxell, Edward Leffingwell.

1. Study of the entelodonts (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, p. 223, March 31, 1920.
2. A tiny Oligocene artiodactyl *Hypisodus alacer* sp. nov.: Am. Jour. Sci., 4th ser., vol. 49, pp. 391-398, 4 figs., June, 1920.
3. Entelodonts in the Marsh collection: Am. Jour. Sci., 4th ser., vol. 50, pp. 243-255, 361-386, 431-445, 20 figs., 1 pl., October-December, 1920.
4. The American bothriodonts: Am. Jour. Sci., 5th ser., vol. 1, no. 4, pp. 325-339, 7 figs., April, 1921.
5. *Palaeologus*, an extinct hare: Am. Jour. Sci., 5th ser., vol. 1, no. 4, pp. 340-348, 20 figs., April, 1921.
6. The nature of a species in paleontology and a new kind of type specimen: Jour. Geology, vol. 29, no. 5, pp. 475-479, July-August, 1921.
7. New amynodonts in the Marsh collection: Am. Jour. Sci., 5th ser., vol. 2, pp. 21-34, 7 figs., July, 1921.
8. New species of *Hyracodon*: Am. Jour. Sci., 5th ser., vol. 2, pp. 34-40, 5 figs., July, 1921.
9. *Caenopus*, the ancestral rhinoceros: Am. Jour. Sci., 5th ser., vol. 2, pp. 41-51, 6 figs., July, 1921.
10. A study of *Diceratherium* and the diceratheres: Am. Jour. Sci., 5th ser., vol. 2, pp. 197-208, 8 figs., October, 1921.
11. Oligocene rodents of the genus *Ischyromys*: Am. Jour. Sci., 5th ser., vol. 3, pp. 123-130, 7 figs., February, 1922.
12. Fossils of the Connecticut Valley (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 209, March 31, 1922.
13. Relationship of the Great Basin and Great Plains fauna (abstract): Geol. Soc. America, Bull., vol. 33, no. 1, p. 210, March 31, 1922.

Troxell, Edward Leffingwell—Continued.

14. The status of *Homogalax*, with two new species: Am. Jour. Sci., 5th ser., vol. 3, pp. 288–292, 4 figs., April, 1922.
15. *Helaletes* redefined: Am. Jour. Sci., 5th ser., vol. 3, pp. 365–370, 3 figs., May, 1922.
16. Horned Eocene ungulates: Am. Jour. Sci., 5th ser., vol. 4, pp. 31–37, 5 figs., July, 1922.
17. The genus *Hyrachyus* and its subgroups: Am. Jour. Sci., 5th ser., vol. 4, pp. 38–49, 5 figs., 1 pl., July, 1922.
18. *Pauromys perditus*, a small rodent [Bridger formation, Wyoming]: Am. Jour. Sci., 5th ser., vol. 5, pp. 155–156, 1 fig., February, 1923.
19. *Diplolophus*, a new genus of rodents: Am. Jour. Sci., 5th ser., vol. 5, pp. 157–159, 5 figs., February, 1923.
20. American rhinoceroses and the evolution of *Diceratherium* (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 134, March 30, 1923.
21. The Eocene rodents *Sciuravus* and *Tillomys*: Am. Jour. Sci., 5th ser., vol. 5, pp. 383–396, 23 figs., May, 1923.
22. The Apatemyidae: Am. Jour. Sci., 5th ser., vol. 5, pp. 503–506, 6 figs., June, 1923.
23. A new marsupial [*Herpetotherium marsupium*, Bridger Basin, Wyoming]: Am. Jour. Sci., 5th ser., vol. 5, pp. 507–510, 4 figs., June, 1923.
24. Geological features of city parks: Science, new ser., vol. 60, pp. 308–309, October 3, 1924.
25. Mechanics of crocodile vertebrae: Geol. Soc. America, Bull., vol. 36, no. 4, pp. 605–614, 6 figs., December 30, 1924.
26. The Bridger crocodiles: Am. Jour. Sci., 5th ser., vol. 9, pp. 29–72, 22 figs., January, 1925.
27. *Hyposaurus*, a marine crocodilian: Am. Jour. Sci., 5th ser., vol. 8, pp. 489–514, 15 figs., June, 1925.
28. *Thoracosaurus*, a Cretaceous crocodile: Am. Jour. Sci., 5th ser., vol. 10, pp. 219–233, 6 figs., September, 1925.
29. Fossil logs and nuts of hickory: Sci. Monthly, vol. 21, no. 6, pp. 570–572, 3 figs., December, 1925.
30. *Smilodectes* or *Notharctus*: Am. Jour. Sci., 5th ser., vol. 11, pp. 423–428, 3 figs., May, 1926.

Trueman, Arthur Elijah.

1. Aspects of ontogeny in the study of ammonite evolution: Jour. Geology, vol. 30, no. 2, pp. 140–143, 1 fig., February–March, 1922.

Tucker, R. C. See Tilton, 13.

Tucker, William Burling. See also Boalich, 1.

1. Economic minerals of the Avawatz Mountains: California State Min. Bur., Mining in California, vol. 18, no. 3, pp. 114–117, March, 1922.
2. Gold lodes of the East Fork mining district, Trinity County: California State Min. Bur., Mining in California, vol. 18, no. 6, pp. 270–273, June, 1922.
3. Silver lodes of the South Fork mining district, Shasta County: California State Min. Bur., Mining in California, vol. 18, no. 7, pp. 313–321, 2 figs., July, 1922.
4. Copper resources of Shasta County: California State Min. Bur., Mining in California, vol. 20, no. 4, pp. 419–447, 13 figs., 1 pl. (map), October, 1924.

Tucker, William Motier.

1. Pyrite deposits in Ohio coal: *Econ. Geology*, vol. 14, no. 3, pp. 198-219, 3 figs. (maps), May, 1919.
2. A zone of large concretions in the Knobstone [Monroe County, Indiana]: *Indiana Acad. Sci., Proc.*, 1921, pp. 221-222, 2 figs., 1922.
3. History of the lakes near La Porte, Indiana: *Indiana Acad. Sci., Proc.* 38th Ann. Meeting, 1922, pp. 83-94, 5 figs., 1923.

Tunell, George. See Posnjak, 2.

Turner, Henry Ward.

1. The magmatic origin of the chalcopyrite and bornite at Engels [Plumas County, California]: *Min. and Sci. Press*, vol. 123, no. 10, pp. 333-334, September 3, 1921.
2. Platinum in quartz veins: *Eng. and Min. Jour.*, vol. 113, no. 12, pp. 488-489, March 25, 1922.
3. Origin of Wilshire gold ore [California]: *Eng. and Min. Jour.-Press*, vol. 118, no. 5, p. 172, August 2, 1924.
4. Magnesite deposits and their origin: *Econ. Geology*, vol. 20, no. 2, pp. 197-198, March-April, 1925.
5. Metal content in magmas (discussion): *Econ. Geology*, vol. 20, no. 6, pp. 607-608, September-October, 1925.

Turner, Homer Griffield.

1. Laboratory determinations of dip and strike: *Science*, new ser., vol. 55, pp. 53-54, 1 fig., January 13, 1922.
2. (and Randall, H. R.). A preliminary report on the microscopy of anthracite coal: *Jour. Geology*, vol. 31, no. 4, pp. 306-313, 11 figs., May-June, 1923.
3. Microscopical structure of anthracite: *Am. Inst. Min. and Met. Eng., Trans.* [preprint] no. 1409, 21 pp., 21 figs., February, 1925; with discussion, *Trans.*, vol. 71, pp. 127-148, 21 figs., 1925; abstract, *Mining and Metallurgy*, vol. 7, no. 229, p. 26, January, 1926.

Twenhofel, Lillian H.

1. Changes in the oxidation of iron in magnetite: *Econ. Geology*, vol. 22, no. 2, pp. 180-188, March-April, 1927.

Twenhofel, William Henry. See also Lee, W. T., 1; Stanton, 8; Thwaites, 2.

1. The chert of the Wreford and Foraker limestones along the State line of Kansas and Oklahoma: *Am. Jour. Sci.*, 4th ser., vol. 47, pp. 407-429, 1 fig., June, 1919.
2. Additional facts relating to the granite boulders of southeastern Kansas: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 132-135, August, 1919.
3. Pre-Cambrian and Carboniferous algal deposits: *Am. Jour. Sci.*, 4th ser., vol. 48, pp. 339-352, 5 figs., November, 1919.
4. (and Thwaites, F. T.). The Paleozoic section of the Tomah and Sparta quadrangles, Wisconsin: *Jour. Geology*, vol. 27, no. 8, pp. 614-633, 2 figs., November-December, 1919.
5. [The Cretaceous sediments of Kansas (discussion)]: *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 135-136, March 31, 1920.
6. The Comanchean and Dakota strata of Kansas: *Am. Jour. Sci.*, 4th ser., vol. 49, pp. 281-297, 1 fig., April, 1920.
7. Revision of the Anticosti section (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 209, March 31, 1920.

Twenhofel, William Henry—Continued.

8. (and Edwards, E. C.). The metamorphic rocks of Woodson County, Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 1, pp. 64-74, 1 fig., 1 pl., January-February, 1921.
9. (and Conine, W. H.). The postglacial terraces of Anticosti Island: *Am. Jour. Sci.*, 5th ser., vol. 1, pp. 268-278, 2 figs., March, 1921.
10. Studies of sedimentation in the universities of the central part of the United States (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 20, March 31, 1921.
11. (and Edwards, E. C.). Occurrence of basal conglomerates (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 40, March 31, 1921.
12. Faunal and sediment variations in the Anticosti sequence: Canada, *Geol. Survey, Bull.* no. 33, pp. 1-14, September 14, 1921.
13. Impressions made by bubbles, raindrops, and other agencies: *Geol. Soc. America, Bull.*, vol. 32, no. 4, pp. 359-371, 7 figs., December 1, 1921.
14. Development of shrinkage cracks in sediments without exposure to the atmosphere (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 64, March 30, 1923.
15. The negligible oil possibilities of Wisconsin: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 6, pp. 653-660, 1 fig. (map), November-December, 1923.
16. (and others). Report of the committee on sedimentation. 65 pp. Issued in mimeograph form by the National Research Council, Washington, D. C., 1924.
17. The geology and invertebrate paleontology of the Comanchean and "Dakota" formations of Kansas: Kansas, *State Geol. Survey, Bull.* 9, 135 pp., 23 pls. (incl. maps), 1924.
18. (and others). Researches in sedimentation in 1924; report of the committee on sedimentation. 78 pp., issued in mimeographed form by the National Research Council, Washington, D. C., 1925. Includes contributions by E. M. Kindle, J. Volney Lewis, A. C. Trowbridge, Eliot Blackwelder, J. A. Udden, L. Murray Neumann, W. A. Tarr, Robert W. Sayles, R. O. E. Davis, George Steiger, C. E. Van Orstrand, and W. H. Twenhofel.
19. Significance of some of the surface structures of central and western Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 7, pp. 1061-1070, October, 1925.
20. (and Stryker, W. L.). The subsurface distribution of the Comanchean in western Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 7, October, 1925.
21. Treatise on sedimentation. 661 pp., 61 figs., Baltimore, The Williams & Wilkins Company, 1926.
22. (and others). Researches in sedimentation in 1925-1926; report of the committee on sedimentation. 98 pp., issued in mimeographed form by the National Research Council, Washington, D. C., 1926. Includes contributions by C. A. Bonine, A. C. Tester, Eliot Blackwelder, R. C. Wallace, L. W. Collet, L. Murray Neumann, Kirk Bryan, George Steiger, C. E. Van Orstrand, O. E. Meinzer, R. O. E. Davis, E. M. Kindle, T. Wayland Vaughan, M. M. Leighton, Ernst Antevs, W. H. Twenhofel, and W. A. Tarr.

Twenhofel, William Henry—Continued.

23. Intrusive granite of the Rose dome, Woodson County, Kansas: *Geol. Soc. America, Bull.*, vol. 37, no. 2, pp. 403-412, 2 figs., June 30, 1926; abstract, vol. 36, no. 1, pp. 166-167, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 157, March 30, 1925.
24. (and Tester, A. C.). New data on the Comanchean strata of central Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 6, pp. 553-561, June, 1926.
25. Hunting fossils on Anticosti Island: *Natural History (Am. Mus. Nat. Hist., Jour.)*, vol. 26, no. 5, pp. 515-524, 9 figs., September-October, 1926.
26. Geology of the Mingan Islands: *Geol. Soc. America, Bull.*, vol. 37, no. 4, pp. 535-550, 1 fig., December 30, 1926; abstract, no. 1, pp. 172-173, March 30, 1926; *Pan-Am. Geologist*, vol. 45, no. 2, pp. 165-166, 1926.
27. Ordovician strata in deep wells of western central Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 1, pp. 49-53, January, 1927.
28. Research in sedimentation: *Jour. Geology*, vol. 35, no. 2, pp. 183-190, February-March, 1927.
29. (and others). Researches in sedimentation in 1926-1927; report of the committee on sedimentation. 78 pp., 1 fig. Issued in mimeographed form by the National Research Council, Washington, D. C., 1927. Includes contributions by E. M. Kindle, Kirk Bryan, Leon W. Collet, W. A. Nelson, George Steiger, R. O. E. Davis, O. E. Meinzer, Chancey Juday, M. M. Leighton, Ernst Antevs, Thomas Wayland Vaughan, R. C. Wallace, Eliot Blackwelder, W. A. Tarr, and R. D. Reed.
30. Geology of Anticosti Island [descriptions of Bryozoa and Ostracoda by R. S. Bassler and of Cephalopoda by A. F. Foerste]; Canada, *Geol. Survey, Mem.* 154, 481 pp., 1 fig. (map), 60 pls., 1927. Review by Charles Schuchert, *Am. Jour. Sci.*, 5th ser., vol. 17, pp. 93-96, January, 1929.
31. Inquiry into the magnitude of the deep-sea deposits (abstract): *Pan-Am. Geologist*, vol. 49, no. 2, p. 151, March, 1928; *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 222-223, March 30, 1928.
32. (and Bremer, Bernard). An extension of the Rose dome intrusives, Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 7, pp. 757-762, July, 1928.
33. Oölites of artificial origin: *Jour. Geology*, vol. 36, no. 6, pp. 564-568, August-September, 1928.
34. Report of the committee on sedimentation, 1927-1928: *Nat. Research Council, Reprint and Circ. Ser.*, no. 85, 83 pp., 1928.

Twitchell, George B.

1. Affinities of the true stromatoporids (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, p. 172, 1928; *Ohio Jour. Sci.*, vol. 28, no. 3, p. 150, May, 1928.

Twitchell, Mayville William, 1868-1927.

1. Our mineral industry in 1918: New Jersey, Dept. Conservation and Development, *Ann. Rept. for 1919*, pp. 105-115, 1919.
2. The mineral industries of New Jersey in 1921 and 1922: New Jersey, Dept. Conservation and Development, *Ann. Rept. 1922 and 1923*, pp. 37-45, 1923.
3. The mineral industry of New Jersey for 1923: New Jersey, Dept. Conservation and Development, *Geol. ser., Bull.* 26, 15 pp., 1925.

Twitchell, Mayville William—Continued.

4. The mineral industry of New Jersey for 1924: New Jersey, Dept. Conservation and Development, Geol. ser., Bull. 27, 14 pp., 1925.
5. Important ground water horizons in New Jersey: New Jersey, Report of the Water Policy Commission, Part 2, pp. (A) 41-53, February 27, 1926.
6. The mineral industry of New Jersey for 1925: New Jersey, Dept. Conservation and Development, Bull. 29, 16 pp., 1927.

Tyrrell, Joseph Burr.

1. Was there a "Cordilleran glacier" in British Columbia?: Jour. Geology, vol. 27, no. 1, pp. 55-60, January-February, 1919.
2. Notes on the placer mines of Cariboo, British Columbia: Econ. Geology, vol. 14, no. 4, pp. 335-345, 1 fig., 1 pl., June, 1919.
3. The veins of Cobalt [Ontario] (discussion): Econ. Geology, vol. 15, no. 5, pp. 453-454, July-August, 1920.
4. Mining in Canada: Science, new ser., vol. 57, pp. 31-38, January 12, 1923.
5. Preglacial oxidation in northern Ontario (discussion): Econ. Geology, vol. 18, no. 3, pp. 296-297, April-May, 1923.
6. Dinosaurs and coal in the Red Deer country, Alberta: Science, new ser., vol. 57, pp. 457-459, April 20, 1923.
7. (and Hore, R. E.). The Kirkland Lake fault: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, sec. 4, pp. 51-63, 4 figs., 1926; Canadian Min. Jour., vol. 46, no. 23, pp. 561-564, June 5, 1925.
8. Memorial of Willet Green Miller: Geol. Soc. America, Bull., vol. 37, no. 1, pp. 99-110, 1 pl. (portr.), March 30, 1926; Canadian Min. Jour., vol. 47, no. 41, pp. 973-976, October 8, 1926.
9. (and Hore, R. E.). Geology of the Kirkland Lake gold mine [Ontario]: Mining and Metallurgy, vol. 7, no. 231, pp. 118-121, 2 figs., March, 1926.

Udden, Johan August. See also Daly, 12; DeGolyer, 2; Hoots, 1; Savage, 5; Twenhofel, 16, 18; Waite, 1.

1. Fossil ice crystals; an instance of the practical value of "pure science": Texas, Univ., Bull. no. 1821, 8 pp., 10 pls., April 10, 1918.
2. The anticlinal theory as applied to some quicksilver deposits: Texas, Univ., Bull. no. 1822, 30 pp., 16 figs., April 15, 1918. Review by W. H. Emmons, Eng. and Min. Jour., vol. 107, pp. 916-917, 2 figs., May 24, 1919.
3. Aids to identification of geological formations: Texas, Univ., Bur. Econ. Geology and Technology, Handbook series no. 1, 69 pp. [n. d., 1919?].
4. (and Waite, V. V.). Microscopic characteristics of the Bend and the Ellenburger limestones. [Texas, Univ., Bur. Econ. Geology, Austin, 1919.] (Mimeographed, 25 pp., 10 photographs, edition limited.)
5. (and Baker, C. L., and Böse, Emil). Review of the geology of Texas, 3d ed., revised 1919: Texas, Univ., Bull. 1916, no. 44, 178 pp., 12 figs., map [1919].
6. Anticlinal theory as applied to some quicksilver deposits (abstract): Geol. Soc. America, Bull., vol. 30, p. 112, March 31, 1919.
7. Oil-bearing formations in Texas: Am. Assoc. Petroleum Geologists. Bull., vol. 3, pp. 82-98, 1919.

Udden, Johan August—Continued.

8. Observations on two deep borings near the Balcones faults [Texas] (with discussion) : Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 124-131, 1919.
9. Suggestions of a new method of making underground observations: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 1, pp. 83-85, 1 fig., 1920.
10. The Troup, Texas, meteorite: U. S. Nat. Mus., Proc., vol. 59, pp. 471-476, 2 figs., 2 pls., 1921.
11. Chronology in geology (with discussion by A. C. Lawson): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 21-23, March 31, 1921.
12. Characteristics of some Texas sedimentary rocks as seen in well samples: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 3, pp. 373-385, May-June, 1921.
13. Some cavern deposits in the Permian in west Texas: Geol. Soc. America, Bull., vol. 33, no. 1, pp. 153-155, March 31, 1922.
14. Wide extent of Texas potash formations: Pan-Am. Geologist, vol. 37, no. 3, pp. 149-251, April, 1922.
15. Potash wells in western Texas: Pan-Am. Geologist, vol. 37, no. 4, pp. 344-345, May, 1922.
16. The "rim rock" of the High Plains: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 1, pp. 72-74, January-February, 1923.
17. Laminated structure of anhydrite beds: Pan-Am. Geologist, vol. 41, no. 3, p. 227, April, 1924.
18. Laminated anhydrite in Texas: Geol. Soc. America, Bull., vol. 35, no. 2, pp. 347-354, 4 pls., June 30, 1924; abstract, no. 1, p. 114, March 30, 1924.
19. Study of the laminated structure of certain drill cores obtained from the Permian rocks of Texas, with particular reference to the bearing of the stratigraphic sequence upon problems of climatic variation: Carnegie Inst. Washington, Year Book no. 24, p. 345, December, 1925.
20. Etched potholes: Texas, Univ., Bull. no. 2509, 9 pp., 2 figs., 6 pls., December, 1925.
21. Texas Bureau of Economic Geology [activities]: Pan-Am. Geologist, vol. 44, no. 4, pp. 327-328, November, 1925.
22. The Southwest earthquake of July 30, 1925: Texas, Univ., Bull. no. 2609, 32 pp., 1 pl. (map), June, 1926.
23. (and Waite, V. V.). Some microscopic characteristics of the Bend and Ellenburger limestones: Texas Univ., Bull. no. 2703, 8 pp., 9 pls., February, 1927.
24. Fossils from the Word formation of west Texas (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 159, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 156, March, 1927.
25. A neglected field in stratigraphy: Texas, Univ., Bull., no. 2801, pp. 55-66, 1928.
26. Potash in Texas: Intern. Bergwirthschaft, Jg. 3, H. 4-5, pp. 80-81, April-May, 1928.
27. Study of the laminated structure of certain drill cores obtained from Permian rocks of Texas: Carnegie Inst. Washington, Year Book no. 27, p. 363, December, 1928.

Udden, Jon Andreas.

1. Subsurface geology of the oil districts of north central Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 3, pp. 34-38, 1919.
2. Occurrence of Ordovician sediments in western Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 6, pp. 634-635, June, 1926.
3. Can we classify the methods by which oil fields have been discovered?: *Oklahoma Acad. Sci., Proc.*, vol. 6, pt. 2, 1926 (*Oklahoma, Univ., Bull.*, new ser. no. 348), pp. 273-278, January 1, 1927.

Uglow, William Lawrence, 1884-1926. See also Bancroft, M. F., 4; Johnston, W. A., 22; Nichols, 1; Young, G. A., 6.

1. Geology of platinum deposits: *Eng. and Min. Jour.*, vol. 108, pp. 352-355, 390-393, August 30 and September 6, 1919.
2. Possibilities for platinum in western Canada: *Canadian Min. Inst., Monthly Bull.* no. 95, pp. 207-220, March, 1920; *Trans.*, vol. 23, pp. 374-389 [1921].
3. Geology of the North Thompson Valley map area, British Columbia: Canada, *Geol. Survey, Summ. Rept.*, 1921, pt. A, pp. 72-106, 12 figs., 2 pls., map, 1922.
4. A so-called bornite-chalcopyrite intergrowth from Legate Creek, Pacific British Columbia: *Am. Mineralogist*, vol. 7, no. 1, pp. 1-4, 4 figs., January, 1922.
5. The Eocene coal basin at Chu Chua, British Columbia: *Canadian Inst. Min. and Met., Monthly Bull.*, no. 124, pp. 896-907, August, 1922.
6. Quartz veins of Barkerville, Cariboo district, British Columbia: *Canadian Inst. Min. and Met., Monthly Bull.*, no. 127, pp. 1165-1175, November, 1922.
7. The Eocene coal basin at Chu Chua, British Columbia (with discussion): *Canadian Inst. Min. and Met., Monthly Bull.*, no. 124, pp. 896-907, August, 1922; *Trans.*, vol. 25, pp. 370-381 [1923].
8. Quartz veins of Barkerville, Cariboo district, British Columbia (with discussion by M. F. Bancroft): *Canadian Inst. Min. and Met., Monthly Bull.*, no. 127, pp. 1165-1175, November, 1922; *Trans.*, vol. 25, pp. 152-164 [1923].
9. Bedrocks and quartz veins of Barkerville map area, Cariboo district, British Columbia: Canada, *Geol. Survey, Summ. Rept.*, 1922, pt. A, pp. 82-87, 1923.
10. (and Johnston, W. A.). Origin of the placer gold of the Barkerville area, Cariboo district, British Columbia, Canada: *Econ. Geology*, vol. 18, no. 6, pp. 541-561, 3 figs., September, 1923.
11. Cretaceous age and early Eocene uplift of a peneplain in southern British Columbia: *Geol. Soc. America, Bull.*, vol. 34, no. 3, pp. 561-572, 4 figs., September 30, 1923.
12. The Windpass gold mine, Chu Chua, British Columbia: *Canadian Min. Jour.*, vol. 45, no. 2, pp. 47-49, 4 figs., January 11, 1924.
13. Ore problems and the microscope: *Canadian Inst. Min. and Met., Monthly Bull.*, no. 147, pp. 495-502, July, 1924.
14. Undiscovered mines of British Columbia: *Canadian Inst. Min. and Met., Monthly Bull.*, no. 138, pp. 595-613, October, 1923; *Trans.*, vol. 26, pp. 300-318 [1924].
15. (and Osborne, F. F.). A gold-cobaltite-lodestone deposit, British Columbia, with notes on the occurrence of cobaltite: *Econ. Geology*, vol. 21, no. 3, pp. 285-293, May, 1926.

Uglow, William Lawrence—Continued.

16. Genesis of the magnetite deposits near the west coast of Vancouver Island: *Econ. Geology*, vol. 21, no. 4, pp. 352-363, June-July, 1926.
17. L'Etang limestone deposit, Charlotte County, New Brunswick: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 132-135, 1 fig., 1927.

Uhrlaub, Rudolph.

1. Butler County, Kansas [petroleum fields]: *Am. Assoc. Petroleum Geologists*, vol. 5, no. 3, pp. 421-424, May-June, 1921.

Ulrich, Edward Oscar. See also Slocom, 1; Swartz, C. K., 9; Winchester, 1.

1. Ostracoda [from the Chapman sandstone of Maine]: *U. S. Geol. Survey, Prof. Paper* 89, pp. 289-293, 1 pl., 1916.
2. Newly discovered instances of early Paleozoic oscillations (abstract): *Washington Acad. Sci., Jour.*, vol. 9, no. 10, pp. 297-298, May 19, 1919.
3. Major causes of land and sea oscillations: *Washington Acad. Sci., Jour.*, vol. 10, no. 3, pp. 57-78, 4 figs., February 4, 1920. *Smithsonian Inst., Ann. Rept.*, 1920, pp. 321-337, 4 figs., 1922.
4. (and Ruedemann, Rudolf, and Bassler, R. S.). Notes on the ventral appendages of *Neolenus serratus*: *Smithsonian Misc. Coll.*, vol. 67, no. 7, pp. 366-368, December 20, 1921.
5. Some new facts bearing on correlations of Chester formations: *Geol. Soc. America, Bull.*, vol. 33, no. 4, pp. 805-852, 2 figs., November 2, 1922.
6. Revision of the Paleozoic systems; Part II, The Ordovician system (abstract with discussion by J. J. Galloway and A. F. Foerste): *Geol. Soc. America, Bull.*, vol. 33, no. 1, p. 112, March 31, 1922.
7. Ordovician "hypoparian" genera of trilobites (abstract): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 205-206, March 31, 1922.
8. (and Bassler, R. S.). American Silurian formations: *Maryland Geol. Survey, Silurian*, pp. 233-270, 8 figs., 1923.
9. (and Bassler, R. S.). Paleozoic Ostracoda; their morphology, classification, and occurrence: *Maryland Geol. Survey, Silurian*, pp. 271-391, 18 figs., 1923.
10. New classification of the "Heterocrinidae": Canada, *Geol. Survey, Mem.* 138, pp. 82-101, 11 figs., 1924.
11. *Modiodesma* n. gen. Ulrich, and the genotype of *Modiolopsis* Hall: Canada, *Geol. Survey, Mem.* 138, pp. 183-190, 1924.
12. Notes on new names in table of formations and on physical evidence of breaks between Paleozoic systems in Wisconsin: *Wisconsin Acad. Sci. Trans.*, vol. 21, pp. 71-107, 1924.
13. (and Bassler, Ray S.). A classification of the toothlike fossils, conodonts, with descriptions of American Devonian and Mississippian species: *U. S. Nat. Mus., Proc.*, vol. 68, art. 12, 63 pp., 5 figs., 11 pls., 1926.
14. (and Mesler, R. D.). Fauna and stratigraphy of the Saint Clair limestone of Arkansas and Oklahoma (abstract): *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 243-244, March 30, 1926.
15. Relative values of criteria used in drawing the Ordovician-Silurian boundary: *Geol. Soc. America, Bull.*, vol. 37, no. 2, pp. 279-348, June 30, 1926.
16. Organic and physical criteria in stratigraphic correlation (abstract): *Pan-Am. Geologist*, vol. 46, no. 1, p. 73, August, 1926.

Ulrich, Edward Oscar—Continued.

17. Comparison of European and American Paleozoic sections (abstract): Pan-Am. Geologist, vol. 46, no. 1, pp. 73-74, August, 1926.
18. Fossiliferous boulders in the Ouachita "Caney" shale and the age of the shale containing them: Oklahoma Geol. Survey, Bull. no. 45, 48 pp., 3 figs., 6 pls., November, 1927.

Umpleby, Joseph Bertram.

1. World view of mineral wealth (abstract): Geol. Soc. America, Bull., vol. 30, p. 107, March 31, 1919.
2. (and Livingston, D. C.). A reconnaissance in south central Idaho embracing the Thunder Mountain, Big Creek, Stanley Basin, Sheep Mountain, and Seafoam districts: Idaho, Bur. Mines and Geology, Bull. no. 3, 23 pp., map, 5 pls., 1920.
3. (and Jones, E. L., jr.). Geology and ore deposits of Shoshone County, Idaho: U. S. Geol. Survey, Bull., 732, 156 pp., 8 figs., 16 pls. (incl. maps), 1923.
4. Some structural features of northern Idaho (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 66, March 30, 1923.
5. The Osburn fault, Idaho: Jour. Geology, vol. 32, no. 7, pp. 601-614, 4 figs., October-November, 1924.
6. Increasing the extraction of oil by water flooding: Am. Inst. Min. and Met. Eng., no. 1570 (Petroleum development and technology in 1925), pp. 112-129, 16 figs., April, 1926.

United States Geological Survey.

1. [Map of] State of West Virginia and part of Maryland; coal fields and producing districts, compiled by C. E. Lesher. Scale 1:1,000,000. 1919. [Similar maps of Virginia, Kentucky, Tennessee, Alabama and part of Georgia, Pennsylvania, Ohio, Indiana, Illinois.]
2. [Map showing] oil and gas fields of the State of Kansas. Scale: 1 inch=12 miles. 1920.
3. World atlas of commercial geology; Part I, Distribution of mineral production: U. S. Geol. Survey, 72 pp., 72 pls. (maps), 1921.
4. World atlas of commercial geology; Part II, Water power of the world: U. S. Geol. Survey, 39 pp., 10 pls. (maps), 1921.
5. [Map showing] oil and gas fields of the State of Louisiana. Scale: 1 inch=12 miles. 1921.
6. [Map showing] oil and gas fields of the State of Oklahoma. Scale: 1 inch=12 miles. 1921.
7. The El Dorado, Arkansas, oil and gas field; geological outline: Arkansas Bureau of Mines . . . , pp. 71-86, 2 pls., Little Rock, Arkansas, 1922.
8. The oil supply of the United States: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 1, pp. 42-46, January-February, 1922.
9. Relief map, State of Ohio. Scale, 1:380,160. 1922.
10. Relief map, State of Idaho. Scale, 1 inch=12 miles. 1926. Relief shading by R. W. Berry.

Memoranda for the press [mimeographed]:

11. Kevin-Sunburst oil field, Montana. 4 pp., map, January 12, 1926. (4655)
12. Possibility of finding oil in anticline near Edgemont, South Dakota. 2 pp., map, August 19, 1926. (8580)
13. Oil-bearing formations of southwestern Arkansas. 7 pp., 1 pl. (sections), September 10, 1926. (8823)

United States Geological Survey—Continued.

14. Lead and zinc ores of Sharp and Lawrence counties, Arkansas. 2 pp. November 17, 1926. (10707)
15. Result of core-drilling test in New Mexico. 2 pp., 1 pl. (log of boring), December 8, 1926. (10994)
16. Geology and oil in southeastern Utah. 8 pp., July 29, 1927. (16318)
17. Oil possibilities at Comanche Point and near Wheeler Ridge, California. 2 pp., March 28, 1927. (13338)
18. Relief map, State of Tennessee. 1927. Scale 1:500,000.
19. Geologic map of southwestern Humboldt County [California]: Oil Bull., vol. 14, no. 4, p. 376, April, 1928.

U. S. Senate, Committee on Agriculture and Forestry.

1. Investigation of potash deposits. Hearing before the Committee on Agriculture and Forestry, United States Senate, 68th Cong., 1st sess. on S. 1925. 47 pp. Washington, Government Printing Office, 1924.

Upham, Warren.

1. Memorial of Charles Henry Hitchcock: Geol. Soc. America, Bull., vol. 31, no. 1, pp. 64-80, portr., March 31, 1920.
2. Drumlins at Lake Placid [New York] (abstract): Geol. Soc. America, Bull., vol. 31, no. 1, pp. 128-130, March 31, 1920.
3. Memorial of George Frederick Wright: Geol. Soc. America, Bull., vol. 33, no. 1, pp. 15-30, portr., March 31, 1922.
4. Stages of the ice age: Geol. Soc. America, Bull., vol. 33, no. 3, pp. 491-514, September 1, 1922; abstract, vol. 33, no. 1, pp. 100-101, March 31, 1922.

Urbina, Fernando. See also Waitz, 1.

1. Los yacimientos petrolíferos submarinos: Bol. petróleo, vol. 5, no. 4, pp. 337-377, 15 pls., 3 maps, April, 1918; vol. 25, no. 5, pp. 693-732, 15 pls. (incl. maps), May, 1928.

Uren, Lester Charles.

1. The elements of the oil-well-spacing problem: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 2, pp. 193-216, 6 figs., March-April, 1925.

Urrutia, Claudio.

1. Determination of the azimuth in violent and local earthquakes: Seismol. Soc. America, Bull., vol. 9, no. 2, pp. 38-41, June, 1919.

Vacher, H. C. See Davis, C. W., 2.

Valentine, Wilbur G. See Alling, 12.

Van Burgh, L. R. See Lupton, 2.

Van Couvering, Martin.

1. An outline of petroleum geology and its importance to the natural gasoline industry: Petroleum World, Los Angeles, vol. 12, no. 11, pp. 114-116, 128-130, November, 1927.

Van Deloo, Jacob.

1. Twenty-first report of the director of the State Museum and science department, including the seventy-eighth report of the State Museum, the forty-fourth report of the State geologist, and report of the State paleontologist for 1925: New York State Mus. Bull., no. 267, 107 pp., illus., 1926.

Van de Putte, J.

1. Phénomènes séismiques et volcaniques au Guatemala. 143 pp., Bruxelles, 1924. [Not seen.] Abstract, *Rev. Géologie*, 5th ann., no. 4, p. 238, April, 1924.

Van der Gracht, W. A. J. M. van Waterschoot. See also Foley, 1; Willis, 27.

1. (and others). Theory of continental drift; a symposium on the origin and movement of land masses both intercontinental and intracontinental, as proposed by Alfred Wegener. x, 240 pp., 29 figs., published by the American Association of Petroleum Geologists, Tulsa, Oklahoma, 1928.
2. The problem of continental drift. In *Theory of continental drift*, pp. 1-75, 12 figs., Am. Assoc. Petroleum Geologists, 1928.
3. Remarks regarding the papers offered by the other contributors to the symposium. In *Theory of continental drift*, pp. 197-226, Am. Assoc. Petroleum Geologists, 1928.

Vander Leck, Lawrence.

1. Petroleum resources of California with special reference to unproved areas: California State Min. Bur., Bull., no. 89, 186 pp., 12 figs., 12 pls. (incl. maps), July, 1921.
2. Memoranda on asphalt and bituminous sand deposits of California: California State Min. Bur., *Mining in California*, vol. 18, no. 5, pp. 228-230, May, 1922.

Vanderpool, Harold C.

1. Producing sands in the Garber oil field: Oklahoma Acad. Sci., Proc., vol. 6, pt. 2, 1926 (Oklahoma, Univ., Bull., new ser. no. 348), pp. 286-289, January 1, 1927.
2. Fossils from the Trinity group (Lower Comanchean): *Jour. Paleontology*, vol. 2, no. 2, pp. 95-107, 3 pls., June, 1928.
3. A preliminary study of the Trinity group in southwestern Arkansas, southeastern Oklahoma, and northern Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 11, pp. 1069-1094, 5 figs., November, 1928.

Vanderwilt, John W.

1. A drill core section of the Salina below the salt bed of the Detroit Rock Salt Company mine: Michigan Acad. Sci., Papers, vol. 3, pp. 285-287, 1 pl. 1924.
2. Improvements in the polishing of ores: *Econ. Geology*, vol. 23, no. 3, pp. 292-316, 8 figs., May, 1928.

Van Horn, Frank Robertson. See also Thiessen, 7.

1. Third annual meeting of the Mineralogical Society of America [Ann Arbor, December 29, 1922]: *Am. Mineralogist*, vol. 8, no. 3, pp. 46-55, March, 1923.
2. Proceedings of the third annual meeting of the Mineralogical Society of America, held at Ann Arbor, Michigan, December 29, 1922: *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 147-150, March 30, 1923.
3. Fourth annual meeting of the Mineralogical Society of America [Washington, D. C., December, 1923]: *Am. Mineralogist*, vol. 9, no. 3, pp. 56-71 March, 1924.
4. Proceedings of the fifth annual meeting of the Mineralogical Society of America [Ithaca, New York, December 31, 1924]: *Am. Mineralogist*, vol. 10, no. 3, pp. 61-68, March, 1925.

Van Horn, Frank Robertson—Continued.

5. Proceedings of the fifth annual meeting of the Mineralogical Society of America, held at Cornell University, Ithaca, New York, December 31, 1924: Geol. Soc. America, Bull., vol. 36, no. 1, pp. 241-246, March 30, 1925.
6. The occurrence of a large iron-tourmaline in Alabama pegmatite: Am. Mineralogist, vol. 10, no. 10, pp. 348-350, 2 figs., October, 1925.
7. Suggestions concerning the use of species names in the garnet, amphibole, pyrozone, and tourmaline groups (abstract): Am. Mineralogist, vol. 11, no. 3, pp. 52-54, March, 1926.
8. Proceedings of the sixth annual meeting of the Mineralogical Society of America: Am. Mineralogist, vol. 11, no. 3, pp. 59-68, March, 1926.
9. Proceedings of the sixth annual meeting of the Mineralogical Society of America, held at New Haven, Connecticut, December 28, 29, 30, 1925: Geol. Soc. America, Bull., vol. 37, no. 1, pp. 255-260, March 30, 1926.
10. Proceedings of the seventh annual meeting of the Mineralogical Society of America: Am. Mineralogist, vol. 12, no. 3, pp. 71-91, March, 1927.
11. Proceedings of the seventh annual meeting of the Mineralogical Society of America, held at Madison, Wisconsin, December 27, 28, 29, 1926: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 245-252, March 30, 1927.
12. Proceedings of the eighth annual meeting of the Mineralogical Society of America [Cleveland, December, 1927]: Am. Mineralogist, vol. 13, no. 3, pp. 105-117, March, 1928.
13. Proceedings of the eighth annual meeting of the Mineralogical Society of America, held at Cleveland, Ohio, December 29, 30, and 31, 1927: Geol. Soc. America, Bull., vol. 39, no. 1, pp. 313-320, March 30, 1928.
14. Large magnetite and franklinite crystals from Franklin Furnace, New Jersey: Am. Mineralogist, vol. 13, no. 5, pp. 171-173, 2 figs., May, 1928.

Van Leckwyck, W.

1. Le Canada et ses ressources minérales: Rev. univ. Mines, Liège, 7^{me} sér., t. 18, no. 5, pp. 208-225, June 1, 1928.

Van Lennep, David.

1. Great Green River coal deposits: Pan-Am. Geologist, vol. 39, no. 4, pp. 297-316, May, 1923.

Van Name, Willard G.

1. The supposed Paleozoic barnacle *Protobalanus* and its bearing on the origin and phylogeny of the barnacles: Am. Mus. Novitates, no. 197, 8 pp., 3 figs., November 21, 1925.
2. A new specimen of *Protobalanus*, supposed Paleozoic barnacle: Am. Mus. Novitates, no. 227, 6 pp., 2 figs., October 11, 1926.

Van Orstrand, Charles Edwin. See also Twenhofel, 18, 22.

1. Temperatures in some deep wells in the United States (abstract): Washington Acad. Sci., Jour., vol. 9, no. 13, p. 382, July 19, 1919.
2. Deep-earth temperatures in the United States (abstract): Washington Acad. Sci., Jour., vol. 13, no. 4, p. 65, February 19, 1923.
3. Notes on isostasy: Geol. Soc. America, Bull., vol. 34, no. 2, pp. 300-305, 2 figs., June 30, 1923.

Van Orstrand, Charles Edwin—Continued.

4. Some phases of the resistance of the earth's material to changes (abstract): Nat. Research Council, Bull., vol. 7, pt. 5, no. 41, pp. 94-95, January, 1924.
5. Apparatus for the measurement of temperatures in deep wells by means of maximum thermometers: Econ. Geology, vol. 19, no. 3, pp. 228-248, 11 figs., April-May, 1924.
6. Temperatures in some springs and geysers in Yellowstone National Park: Jour. Geology, vol. 32, no. 3, pp. 194-225, 5 figs., April-May, 1924.
7. Some evidence on the variation of temperature with geologic structure in California and Wyoming oil districts: Econ. Geology, vol. 21, no. 2, pp. 145-165, 11 figs., March-April, 1926.
8. A possible dependence of deep-earth temperatures on geologic structure (abstract): Washington Acad. Sci., Jour., vol. 16, no. 18, p. 503, November 3, 1926.
9. Temperature of world's deepest wells: Oil and Gas Jour., vol. 26, no. 48, pp. 39, 152-153, 9 figs., April 19, 1928.
10. On the nature of isogeothermal surfaces: Am. Jour. Sci., 5th ser., vol. 15, pp. 495-519, 9 figs., June, 1928; abstract, Mining and Metallurgy, vol. 9, pp. 461, 462, 1 fig., October, 1928.

Van Tuyl, Francis Maurice. See also Beckstrom, 1; Savage, 2.

1. The physical history of the upper Mississippi Valley during the late Paleozoic (abstract): Illinois Acad. Sci., Trans., vol. 10, p. 280 [1918].
2. (and Moore, Raymond C.). Late Mississippian orogenic movements in North America (abstract): Geol. Soc. America, Bull., vol. 30, pp. 88-89, March 31, 1919.
3. The Cripple Creek district of Colorado, a re-survey; geology and ore deposits: Colorado School of Mines, Quart., vol. 14, no. 3, pp. 5-10, 1 fig., July, 1919.
4. The future of the petroleum industry in the United States: Colorado School of Mines Mag., vol. 10, no. 12, pp. 215-219, December, 1920.
5. (and Machamer, G. W.). Physical history of the Colorado Front Range (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, pp. 87-88, March 30, 1923.
6. Elements of petroleum geology. 275 pp., 34 figs., Denver, Colorado, The Petroleum Publishing Co. of Colorado [c. 1924].
7. Notes on the origin of petroleum: Colorado School of Mines, Alumni Mag., vol. 14, no. 1, pp. 8-12, May, 1924.
8. The stratigraphy of the Mississippian formations of Iowa: Iowa Geol. Survey, vol. 30, pp. 33-349, 16 figs., 6 pls. (incl. map) [1925].
9. (and Blackburn, Chester O.). The effect of rock flowage on the kerogen of oil shale: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 1, pp. 158-164, 1 fig., January-February, 1925.
10. The occurrence of dolomite: Colorado School of Mines Mag., vol. 14, no. 11, pp. 14-17, March, 1925.
11. The future oil supply: Colorado School of Mines Mag., vol. 15, no. 2, pp. 6-9, June, 1925.
12. (and Beckstrom, R. C.). Pressure effect on migration and accumulation of petroleum: Oil and Gas Jour., vol. 24, no. 6, pp. 70, 74, 78, 92, July 2, 1925.
13. (and Blackburn, Chester O.). The relation of oil shale to petroleum: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 8, November, 1925.

Van Tuyl, Francis Maurice—Continued.

14. The effect of pressure on the migration and accumulation of petroleum: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 10, pp. 917-930, 4 figs., October, 1926.

Van Winkle, Katherine. See Palmer, Katherine Van Winkle.

Varley, Thomas. See also Lewis, 1.

1. (and others). A preliminary report on the mining districts of Idaho: U. S. Bur. Mines, Bull. 166, pp. 1-89, 2 pls. (maps), 1919.
2. (and Reid, W. S.). The extraction of potash from low-grade alunite from Marysvale district, Utah: Utah, Univ., Bull., vol. 11, no. 15, 31 pp., December, 1920.

Vassar, Helen E. See also Gage, 1; Larsen, 14; Palache, 15, 18.

1. Clerici solution for mineral separation by gravity: Am. Mineralogist, vol. 10, no. 5, pp. 123-125, 1 fig., May, 1925.

Vaughan, Francis Edward.

1. Geology of the San Bernardino Mountains north of San Geronimo Pass: California, Univ., Pub., Dept. Geol. Sci., Bull., vol. 13, no. 9, pp. 319-411, 12 figs., 7 pls., map, December 30, 1922.
2. The Five Islands, Louisiana: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 4, pp. 756-797, 12 figs., July, 1925; Geology of salt dome oil fields, pp. 356-397, 12 figs., 1926.

Vaughan, Thomas Wayland. See also Brown, B., 2; Clark, B. L., 8; Schuchert, 20; Twenhofel, 16, 22, 29.

1. (and others). Contributions to the geology and paleontology of the West Indies: Carnegie Inst. Washington, Pub. no. 291, 184 pp., pls., 1919.
2. Contributions to the geology and paleontology of the Canal Zone, Panama, and geologically related areas in Central America and the West Indies; Fossil corals from Central America, Cuba, and Porto Rico, with an account of the American Tertiary, Pleistocene, and recent coral reefs: U. S. Nat. Mus., Bull. 103, pp. 189-524, 85 pls., 21 figs., 1919.
3. Contributions to the geology and paleontology of the Canal Zone, Panama, and geologically related areas in Central America and the West Indies; the biologic character and geologic correlation of the sedimentary formations of Panama in their relation to the geologic history of Central America and the West Indies: U. S. Nat. Mus., Bull. 103, pp. 547-612, 1919.
4. Corals and the formation of coral reefs: Smithsonian Inst., Ann. Rept., 1917, pp. 189-276, 37 pls., 16 figs., 1919.
5. Presentation of geologic information for engineering purposes (abstract): Geol. Soc. America, Bull., vol. 30, pp. 79-80, March 31, 1919.
6. [Report on] study of the stratigraphic geology and of the fossil corals and associated organisms in several of the smaller West Indian islands: Carnegie Inst. Washington, Year Book no. 18, 1919, pp. 345-346, March, 1920.
7. Features of the shifts of land and sea-level in the Atlantic and Gulf Coastal Plain during Pleistocene and post-Pleistocene time (abstract, with discussion by W. T. Lee): Geol. Soc. America, Bull. vol. 31, no. 1, p. 113, March 31, 1920.

Vaughan, Thomas Wayland—Continued.

8. Stratigraphy of the Virgin Islands of the United States and of Culebra and Vieques islands (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 216-217, March 31, 1920.
9. Corals from the Cannonball marine member of the Lance formation: *U. S. Geol. Survey, Prof. Paper* 128, pp. 61-66, 1 pl., August 11, 1920.
10. Researches on sedimentation: *Geol. Soc. America, Bull.*, vol. 31, no. 4, pp. 401-410, November 30, 1920.
11. Some features of the Virgin Islands of the United States; the relations of the Virgin Islands to the principal Caribbean ridges and deeps; islands of the Virgin Bank; St. Croix (abstract): *Assoc. Am. Geographers, Annals*, vol. 9, pp. 78-82 [1920?].
12. Geological mapping in the western part of the United States, Central America, and the West Indies: *Pan-Pacific Scientific Conference, First, Proc.*, Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 3, pp. 696-705, 1 fig., 1921.
13. Correlation of the Tertiary formations of Central America and the West Indies: *Pan-Pacific Scientific Conference, First, Proc.*, Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 3, pp. 819-844, 1921.
14. The basis of the correlation of post-Cretaceous formations of the Pacific region: *Pan-Pacific Scientific Conference, First, Proc.*, Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 3, pp. 866-873, 1921.
15. General statement on the work of the committee on sedimentation, division of geology and geography, National Research Council (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 19, March 31, 1921.
16. (and Cooke, Wythe, Condit, D. D., Ross, C. P., Woodring, W. P., and Calkins, F. C.). A geological reconnaissance of the Dominican Republic: *Dominican Republic, Geol. Survey, Mem.*, vol. 1, 268 pp., 23 pls. (incl. maps), Washington, 1921. Spanish edition, 302 pp., Washington, 1922.
17. Stratigraphic significance of the species of West Indian fossil Echini: *Carnegie Inst., Washington, Pub. no.* 306, pp. 105-122, 1922.
18. The study of the earth sciences, its purpose and its interrelations with medicine: *U. S. Naval Medical Bull.*, vol. 18, no. 1, pp. 3-16, 1923.
19. Studies of fossils from Walu Bay, Fiji; corals and bottom samples from the Bahamas and Florida: *Carnegie Inst., Washington, Year Book* no. 21, pp. 187-190, January, 1923.
20. The work of Joseph Barrell on problems in sedimentation: *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 28-44, March 30, 1923.
21. Studies of the larger Tertiary Foraminifera from tropical and subtropical America: *Nat. Acad. Sci., Proc.*, vol. 9, no. 7, pp. 253-257, July, 1923.
22. Stratigraphy of the Virgin Islands of the United States and of Culebra and Vieques islands, and notes on eastern Porto Rico: *Washington Acad. Sci., Jour.*, vol. 13, no. 14, pp. 303-317, August 19, 1923.
23. On the relative value of species of smaller Foraminifera for the recognition of stratigraphic zones (with discussion by Esther E. Richards): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 5, pp. 517-531, September-October, 1923.
24. Sediments and climate: *Geog. Rev.*, vol. 13, no. 4, p. 665, October, 1923.

Vaughan, Thomas Wayland—Continued.

25. Report of the committee on sedimentation and marine deposits: Nat. Research Council, Bull., vol. 7, pt. 5, no. 41, pp. 136-138, January, 1924.
26. Recent progress in the study of the tectonic features of the West Indies and Central America: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, pp. 735-741 [1924].
27. A sketch of the history of igneous activity in the northern and northeastern West Indies: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, pp. 851-855 [1924].
28. Correlation of the Cainozoic formations in the Pacific region; introduction to the symposium: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, pp. 860-862 [1924].
29. Recent additions to knowledge of the correlation of the Tertiary geologic formations of northeastern Mexico, Central America, the West Indies, northern South America, and Lower California: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, pp. 864-870 [1924].
30. The embryonic and meridional chambers of American species of lepidocycline Foraminifera: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 1, pp. 871-873 [1924].
31. The ecology and growth rate of corals: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2, pp. 1092-1101 [1924].
32. Coral reefs and submerged platforms: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2, pp. 1128-1134 [1924].
33. Oceanography in its relations to other earth sciences: Washington Acad. Sci., Jour., vol. 14, no. 14, pp. 307-333, 2 pls., August 19, 1924.
34. Criteria and status of correlation and classification of Tertiary deposits: Geol. Soc. America, Bull., vol. 35, no. 4, pp. 677-742, 3 pls. (correlation tables, December, 1924; abstract, no. 1, pp. 171-172, March 30, 1924.
35. American and European Tertiary larger Foraminifera: Geol. Soc. America, Bull., vol. 35, no. 4, pp. 785-822, 6 figs., 7 pls., December, 1924; abstract, no. 1, pp. 173-174, March 30, 1924.
36. American and European Tertiary corals: Geol. Soc. America, Bull., vol. 35, no. 4, pp. 823-825, December 30, 1924.
37. (and Hoffmeister, John Edward). New species of fossil corals from the Dominican Republic: Harvard Coll., Mus. Comp. Zoology, Bull., vol. 67, no. 8, pp. 315-326, 4 pls., November, 1925.
38. (and Hoffmeister, John Edward). Miocene corals from Trinidad: Carnegie Inst. Washington, Pub. no. 344 (Papers from the Department of Marine Biology of the Carnegie Institution of Washington, vol. 33), pp. 105-134, 1 fig., 7 pls., February, 1926.
39. Application of the generic name *Phyllocoenia* Milne Edwards and Haime and the International code of zoological nomenclature: Science, new ser., vol. 63, pp. 338-339, March 26, 1926.
40. Notes on the igneous rocks of the northeast West Indies and on the geology of the Island of Anguilla: Washington Acad. Sci., Jour., vol. 16, no. 13, pp. 345-358, July 19, 1926.
41. The stratigraphic horizon of the beds containing *Lepidocyclina chaperi* on Haut Chagres, Panama: Nat. Acad. Sci., Proc., vol. 12, no. 8, pp. 519-522, August, 1926.
42. Species of *Lepidocyclina* and *Carpenteria* from the Cayman Islands and their geological significance: Geol. Soc. London, Quart. Jour., vol. 82, pt. 3, pp. 388-400, 3 pls., October 19, 1926.

Vaughan, Thomas Wayland—Continued.

43. Seismological investigations and oceanography: Nat. Research Council, Bull., no. 56 (vol. 11, pt. 2), pp. 69–72, November, 1926.
44. Larger Foraminifera of the genus *Lepidocyclina* related to *Lepidocyclina mantelli*: U. S. Nat. Mus., Proc., vol. 71, art. 8, 5 pp., 4 pls., 1927.
45. A new species of Eocene coral, *Archohelia clarki*, from California [from Meganos formation]: California, Univ. Dept. Geol. Sci., vol. 17, no. 3, pp. 143–144, 1 pl., December 31, 1927.
46. Species of large arenaceous and orbitoidal Foraminifera from the Tertiary deposits of Jamaica: Jour. Paleontology, vol. 1, no. 4, pp. 277–298, 8 pls., January, 1928.
47. *Yaberinella jamaicensis*, a new genus and species of arenaceous Foraminifera: Jour. Paleontology, vol. 2, no. 1, pp. 7–12, 2 pls., March, 1928.
48. Notes on the types of *Lepidocyclina mantelli* (Morton) Gümbel and on topotypes of *Nummulites floridanus* Conrad: Acad. Nat. Sci. Philadelphia, Proc., vol. 79, pp. 299–303, 1 pl., 1928.
49. New species of *Operculina* and *Discocyclina* from the Ocala limestone: Florida State Geol. Survey, 19th Ann. Rept., pp. 155–165, 2 pls., 1928.
50. Family 45, Orbitoididae. In Cushman, Joseph A., Foraminifera, their classification and economic use, pp. 336–356, Sharon, Massachusetts, 1928.
51. Results of recent investigations of American Tertiary larger Foraminifera: Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., pp. 1850–1857, 1928.

Vaux, George, jr.

1. Some unusual quartz pseudomorphs from the Hopewell mine, Warwick Township, Chester County, Pennsylvania: Acad. Nat. Sci., Philadelphia, Proc., vol. 78, 1926, pp. 17–19, 3 figs., 1927.
2. The mines at Falls of French Creek, Chester County, Pennsylvania: Am. Mineralogist, vol. 13, no. 1, pp. 25–29, January, 1928.

Veatch, Arthur Clifford.

1. Estimation of petroleum reserves: Econ. Geology, vol. 17, no. 2, pp. 132–139, March–April, 1922.

Veatch, Jethro Otto.

1. Geology as a factor in soil classification: Michigan Acad. Sci., Papers, vol. 5, pp. 285–296, 1925; abstract, Pan-Am. Geologist, vol. 44, no. 2, pp. 157–158, September, 1925.

Versluys, J.

1. An investigation of the problem of the estimation of gas reserves: Am. Assoc. Petroleum Geologists, Bull., vol. 12, no. 11, pp. 1095–1105, November, 1928.

VerWiebe, Walter A.

1. The stratigraphy of the petroliferous area of eastern Mexico: Am. Jour. Soc., 5th ser., vol. 8, pp. 277–295, 385–394, 481–502, October–December, 1924.
2. Geology of southern Mexico oil fields: Pan-Am. Geologist, vol. 44, no. 2, pp. 121–138, 2 pls. (incl. map), September, 1925.
3. Oil fields of southern Mexico (abstract): Pan-Am. Geologist, vol. 44, no. 2, p. 151, September, 1925.
4. Geology and oil fields of State of Tabasco [Mexico]: Pan-Am. Geologist, vol. 44, no. 4, pp. 273–284, 1 pl., November, 1925.

VerWiebe, Walter A.—Continued.

5. Tectonics of the Tehuantepec Isthmus: *Pan-Am. Geologist*, vol. 45, no. 1, pp. 15-28, 1 pl. (map), February, 1926.
6. Oil fields of Isthmus of Tehuantepec [Mexico]: *Pan-Am. Geologist*, vol. 45, no. 3, pp. 189-200, 1 fig., 1 pl., April, 1926.
7. Salt domes of Isthmus of Tehuantepec: *Pan-Am. Geologist*, vol. 45, no. 5, pp. 349-358, June, 1926.
8. Geology of Roscommon County, Michigan: *Michigan Acad. Sci., Papers*, vol. 7, pp. 159-166, 1 fig. (map), 1927.
9. Surface geology of Menominee County, Michigan: *Michigan Acad. Sci., Papers*, vol. 7, pp. 167-179, 1 pl., 1927.
10. The stratigraphy of Alpena County, Michigan: *Michigan Acad. Sci., Papers*, vol. 7, pp. 181-192, 1 fig. (map), 1927.
11. Stratigraphy of Chippewa County, Michigan: *Michigan Acad. Sci., Papers*, vol. 9, pp. 309-331, 3 figs. (incl. map), 1928.

Vestal, Arthur G.

1. The Colorado mountain front; subdivisions north of the front range (abstract): *Assoc. Am. Geographers, Annals*, vol. 10, pp. 155-156 [1921?].

Vickery, Frederick Paul.

1. The San Jose [California] earthquake: *Seismol. Soc. America, Bull.*, vol. 10, no. 4, pp. 311-315, 2 figs., 1 pl., December, 1920.
2. The apparent intensity of earthquake shock in alluvial areas: *Seismol. Soc. America, Bull.*, vol. 11, no. 1, pp. 80-82, March, 1921.
3. The structural dynamics of the Livermore region: *Jour. Geology*, vol. 33, no. 6, pp. 608-628, 8 figs., August-September, 1925.
4. Piracy and persistence of antecedent streams on the Los Angeles coastal belt (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, p. 207, March 30, 1927.
5. The interpretation of the physiography of the Los Angeles coastal belt [California]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 4, pp. 417-424, 2 figs., April, 1927.
6. Notes on geology of Goleta district, California: *Oil Bull.*, vol. 13, no. 4, pp. 350-352, 2 figs., April, 1927.
7. Structural dynamics of the Livermore region [California] (abstract): *Stanford Univ., Abstracts of Dissertations, 1924-1926*, vol. 1, pp. 151-156, June, 1927.
8. The Goleta oil field [California]: something about its geology, its development, and its future: *Oil Bull.*, vol. 13, no. 7, pp. 691, 764, July, 1927.
9. (and Garrison, R. H.). The Goleta field [petroleum, southern California]: *Mining and Metallurgy*, vol. 8, no. 250, pp. 428-433, 4 figs., October, 1927.
10. Structural features of coastal southern California (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 267, March 30, 1928.
11. Geology of the Los Angeles Basin: *Oil Bull.*, vol. 14, no. 4, pp. 355-361, 1 fig (map), April, 1928.
12. Consequent streams: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 12, no. 5, pp. 515-526, 5 figs., May, 1928.

Vilbrandt, Frank C.

1. An oil-bearing shale of North Carolina: *Elisha Mitchell Sci. Soc., Jour.*, vol. 41, nos. 1-2, pp. 108-114, September, 1925.

Vilbrandt, Frank C.—Continued.

2. Oil-bearing shales of Deep River valley: North Carolina, Dept. Conservation, Econ. Paper no. 59, 23 pp., 1927.

Villafaña, Andrés.

1. Reseña geológico-minera de la región de El Oro, México, y Tlalpujahua, Michoacán: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 41, no. 1, pp. 27-47, July, 1922.

Villafaña, Edmundo.

1. El distrito minero Tepezalá-Asientos, Aguascalientes: Bol. minero, t. 15, no. 4, pp. 465-470, 5 pls., April, 1923.

Villatoro, J. A.

1. Algunas consideraciones sobre exploraciones geológicas de petróleo: Bol. Petróleo, vol. 26, no. 1, pp. 9-11, July, 1928.

Visher, Stephen Sargent. See also Huntington, 1.

1. The geography of South Dakota: South Dakota State Geol. and Nat. Hist. Survey, Bull. 8, pp. 1-177, 52 figs., July, 1918.
2. Geology of the Sullivan County, Indiana, oil field (abstract): Science, new ser., vol. 51, p. 493, May 14, 1920.
3. Climate and geology (abstract): Science, new ser., vol. 51, pp. 522-523, May 21, 1920.
4. Structural features of Indiana (abstract with discussion by W. H. Hobbs on glacial anticyclones): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 27-28, March 31, 1921.
5. Increased oceanic salinity as one cause of increased climatic contrasts, Geol. Soc. America, Bull., vol. 32, no. 4, pp. 429-436, December 1: 1921.
6. The time of glacial loess accumulation in its relation to the climatic implications of the great loess deposits; did they chiefly accumulate during glacial retreat?: Jour. Geology, vol. 30, no. 6, pp. 472-479, September-October, 1922.
7. Special physiographic features in South Dakota: Pan-Am. Geologist, vol. 41, no. 5, pp. 347-354, June, 1924.
8. The solar-cyclonic hypothesis and the glacial period: Sci. Monthly, vol. 20, no. 5, pp. 475-478, May, 1925.
9. Glacial periods and solar-cyclonic hypothesis (abstract): Pan-Am. Geologist, vol. 44, no. 1, p. 74, August, 1925.

Vivar, Gonzalo.

1. Conclusiones principales del informe que acerca de algunos terrenos de los estados de Chiapas y Tabasco . . .: Bol. Petróleo, Mexico, vol. 17, no. 4, pp. 291-295, April, 1924.
2. Informe preliminar acerca de la geología y zonas petrolíferas de la parte norte de los Estados de Tamaulipas y Nuevo León: Mexico Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 14, 12 pp., map, October, 1925.
3. Informe preliminar sobre el estudio geológico-petrolero de la región de Ojinaga, Estado de Chihuahua: Mexico, Departamento de exploraciones y estudios geológicos, Folleto de divulgación, no. 16, 12 pp., October, 1925.
4. Bosquejo geológico de una parte del Estado de Colima: Mexico, Inst. geol., Anales, t. 2, no. 5, pp. 131-154, 5 pls., map, 1926.

Vogdes, Anthony Wayne, 1843-1924.

1. Paleozoic Crustacea; Part I, A bibliography of Paleozoic Crustacea; Part II, A list of the genera and subgenera of the Trilobita; Part III, A summary of the Ordovician genus *Cybele* Lovén: San Diego Soc. Nat. Hist., Trans., vol. 4, 154 pp., 2 pls., June 22, 1925.

Vogt, Johan Herman Lie.

1. The physical chemistry of the crystallization and magmatic differentiation of igneous rocks: Jour. Geology, vol. 29, no. 4, pp. 318-350, 5 figs., May-June; no. 5, pp. 426-443, 11 figs., July-August; no. 6, pp. 515-539, 10 figs., September-October; no. 7, pp. 627-649, 23 figs., October-November; no. 8, pp. 659-672, 2 figs., November-December, 1921; vol. 30, no. 7, pp. 611-630, 2 figs., October-November; no. 8, pp. 659-672, 2 figs., November-December, 1922.
2. Nickel in igneous rocks: Econ. Geology, vol. 18, no. 4, pp. 307-353, June-July, 1923.
3. The physical chemistry of the crystallization and magmatic differentiation of igneous rocks: Jour. Geology, vol. 31, no. 3, pp. 233-252, 3 figs., April-May, no. 5, pp. 407-419, July-August, 1923.
4. Magmas and igneous ore deposits: Econ. Geology, vol. 21, no. 3, pp. 207-233, no. 4, pp. 309-332, no. 5, pp. 469-497, 6 figs., May-August, 1926.
5. On ore magmas: Eng. and Min. Jour., vol. 123, nos. 16 and 17, pp. 645-650, 682-684, April 16 and 23, 1927.
6. Geology of the platinum metals: Econ. Geology, vol. 22, no. 4, pp. 321-355, 1 fig., June-July, 1927.

Von Engeln, Oscar Diedrich. See also Tarr, R. S., 1.

1. The Tully glacial series: New York State Mus., Bull. nos. 227, 228, pp. 39-62, 1 fig., 20 pls., map, 1921.
2. The geography of the Ithaca, New York, region: Assoc. Am. Geographers, Annals, vol. 16, no. 3, pp. 124-150, 2 figs., September, 1926.

Von Schlichten, Otto C.

1. The newer aspect of crystallography (abstract): Ohio Acad. Sci., Proc., vol. 8, pt. 4, p. 170, 1928; Ohio Jour. Sci., vol. 28, no. 3, p. 148, May, 1928.

Voskuil, W. H.

1. Phosphate industry and resources of the United States: Intern. Bergwirtschaft, Jg. 3, H. 6, pp. 97-120, 1 fig., June, 1928.

Wade, Arthur.

1. Two shallow oil fields in Texas—a detailed study (with discussion): Inst. Petroleum Technologists, Jour., vol. 13, no. 61, pp. 181-206, 6 figs., 2 pls., April, 1927.

Wade, Bruce.

1. Recent studies of the Upper Cretaceous of Tennessee: Jour. Geology, vol. 28, no. 5, pp. 377-394, 2 figs., July-August, 1920. Tennessee State Geol. Survey, Bull. 23 (Pt. 1, Ann. Rept. 1919), pp. 51-64, 2 figs., 4 pls. (incl. map), 1920.
2. The fossil annelid genus *Hamulus* Morton, an operculate *Serpula*: U. S. Nat. Mus., Proc., vol. 59, pp. 41-46, 2 pls., 1921.
3. The fauna of the Ripley formation on Coon Creek, Tennessee (Bryozoa, by Ferdinand Canu and R. S. Bassler, pp. 32-39; Crustacea, by Mary J. Rathbun, pp. 184-191; Reptilia, by C. W. Gilmore, pp. 191-192; Pisces, by J. W. Gidley, p. 192): U. S. Geol. Survey. Prof. Paper 137, 272 pp., 2 figs., 72 pls., 1926.

Wade, William Rogers.

1. (and Wandke, Alfred). Geology and mining methods at Pilares mine [Los Pilares de Nacozari, Sonora, Mexico]: Am. Inst. Min. and Met. Eng., Bull., no. 152, pp. 1143-1169, 14 figs., August, 1919; Trans., vol. 63, pp. 382-407, 14 figs., 1920.
2. (and Wandke, Alfred). A big zinc mine in New York State at Edwards, St. Lawrence County: Eng. and Min. Jour.-Press, vol. 116, no. 3, pp. 95-99, 5 figs., July 21, 1923.

Wade, Verdi Valentine. See Udden, 4.

Wagner, Carroll Marshall.

1. (and Schilling, Karl H.) The San Lorenzo group of the San Emigdio region, California: California, Univ., Dept. Geol. Sci., Bull., vol. 14, no. 6, pp. 235-276, 8 pls., November 3, 1923.

Wagner, Emanuel.

1. Prospecting with the Eötvös balance: Eng. and Min. Jour.-Press, vol. 116, no. 14, pp. 583-589, 6 figs., October 6, 1923.

Wagner, Percy Albert.

1. The danger of generalizations: Econ. Geology, vol. 20, no. 3, pp. 282-285, May, 1925.
2. Wood tin—gel replacement of cassiterite (discussion); Econ. Geology, vol. 21, no. 7, pp. 727-731, November, 1926.
3. The microscope and ore geology: Econ. Geology, vol. 21, no. 8, pp. 803-805, December, 1926.
4. The pipe form of ore deposit: Econ. Geology, vol. 22, no. 7, pp. 740-741, November, 1927.
5. Changes in the oxidation of iron in magnetite (discussion): Econ. Geology, vol. 22, no. 8, pp. 845-846, December, 1927.
6. Origin of the magmatic sulphide ores: Econ. Geology, vol. 23, no. 8, pp. 923-927, December, 1928.

Waibel, Leo.

1. Die Inselberglandschaft von Arizona und Sonora: Gesell. Erdkunde Berlin, Zeitschr., Sonderband zur Hundertjahrfeier, pp. 68-91, 1928.

Waite, V. V. See also Udden, 23.

1. (and Udden, J. A.). Observations on the Bend [series] in Bough No. 1 in Brown County, Texas: Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 334-344, 1 fig., 1919.

Waitz, Paul.

1. (and Urbina, Fernando). Los temblores de Guadalajara en 1912: México, Inst. geol., Bol. no. 19, 83 pp., 32 pls., 1919.
2. Descripción petrográfica de unas rocas de Zumpango del Río (Guerrero) [México]: México, Inst. geol., Bol. no. 33, t. 1, pp. 85-89, 1919.
3. "Nubes ardentes" observadas en las erupciones del Jorullo (1759), del Ceboruco (1870), y del volcán de Colima (1913); El volcán del Jorullo; La nueva actividad y el estado actual del volcán Popocatepetl: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 37, nos. 4-6, pp. 267-313, 12 pls., December, 1920.
4. Popocatepetl again in activity: Am. Jour. Sci., 5th ser., vol. 1, no. 1, pp. 81-87, 2 figs., January, 1921.
5. Ascensión al cráter del volcán de Sta. María, Guatemala, en Agosto de 1922: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 41, nos. 7-9, pp. 343-351, 13 pls., October, 1923.

Waitz, Paul—Continued.

6. Erupciones rhyolíticas ligadas con fracturas tectónicas entre Aguascalientes y San Luis Potosí: Soc. cient. "Antonio Alzate," Mem., t. 46, no. 3-6, pp. 201-212, March-June, 1926.

Walcott, Albert J.

1. Some factors influencing crystal habit: Am. Mineralogist, vol. 11, no. 9, pp. 221-239, September, no. 10, pp. 259-278, November, 1926.

Walcott, Charles Doolittle, 1850-1927.

1. Cambrian geology and paleontology, IV; No. 5, Middle Cambrian Algae: Smithsonian Misc. Coll., vol. 67, no. 5, pp. 217-260, 17 pls., December, 26, 1919.
2. Cambrian geology and paleontology, IV; No. 6, Middle Cambrian Spongiae: Smithsonian Misc. Coll., vol. 67, no. 6, pp. 261-364, 31 pls., 1920.
3. Glacier Lake section, Alberta: Smithsonian Misc. Coll., vol. 72, no. 1, p. 15, 1920.
4. Cambrian geology and paleontology, IV; No. 7, Notes on structure of *Neolenus*: Smithsonian Misc. Coll., vol. 67, no. 7, pp. 365-456, 23 figs., 15 pls., December 20, 1921.
5. Occurrence of the oldest known trilobites [Silver Peak district, Nevada]: Pan-Am. Geologist, vol. 37, no. 4, p. 329, May, 1922.
6. Anatomy of early trilobites: Pan-Am. Geologist, vol. 37, no. 4, pp. 321-322, 2 pls., May, 1922.
7. Cambrian geology and paleontology, IV; No. 8, Nomenclature of some post-Cambrian and Cambrian Cordilleran formations (2): Smithsonian Misc. Coll., vol. 67, no. 8, pp. 457-476, March 5, 1923.
8. Cambrian geology and paleontology, IV; No. 9, Cambrian and Ozarkian Brachiopoda, Ozarkian Cephalopoda and Notostraca: Smithsonian Misc. Coll., vol. 67, no. 9, pp. 477-554, 21 pls., June 3, 1924.
9. Cambrian geology and paleontology, V; No. 1, Geological formations of Beaverfoot-Brisco-Stanford Range, British Columbia, Canada: Smithsonian Misc. Coll., vol. 75, no. 1, pp. 1-51, 11 figs., 8 pls., June 28, 1924.
10. Cambrian geology and paleontology, V; No. 2, Cambrian and lower Ozarkian trilobites: Smithsonian Misc. Coll., vol. 75, no. 2, pp. 53-60, 6 pls., July 19, 1924.
11. La discordance de stratification et la lacune stratigraphique pré-dévonienne dans les provinces Cordillères d'Alberta et de Colombie Britannique, Canada: Soc. Géol. Belgique, Livre Jubilaire, pp. 119-123, 1 fig., 2 pls., 1924.
12. Science and service: Science, new ser., vol. 61, pp. 1-5, January 2, 1925.
13. The geological record and the American continent (abstract): Science, new ser., vol. 61, pp. x, xii, January 9, 1925.
14. Geological explorations in the Canadian Rockies (abstract): Science, new ser., vol. 61, p. 129, February 6, 1925.
15. Cambrian geology and paleontology, V, No. 3, Cambrian and Ozarkian trilobites: Smithsonian Misc. Coll., vol. 75, no. 3, pp. 59-146, 2 figs., 10 pls., June 1, 1925.
16. John Mason Clarke: Science, new ser., vol. 62, p. 558, December 18, 1925.
17. Cambrian geology and paleontology, V; No. 4, Pre-Devonian sedimentation in southern Canadian Rocky Mountains: Smithsonian Misc. Coll., vol. 75, no. 4, pp. 147-173, 10 figs., 1 pl. (map), April 2, 1927.

Walcott, Charles Doolittle—Continued.

18. Cambrian geology and paleontology, V; No. 5, Pre-Devonian Paleozoic formations of the Cordilleran provinces of Canada: Smithsonian Misc. Coll., vol. 75, no. 5, pp. 175–368, 12 figs., 108 pls., September 14, 1928.

Waldorf, Creighton O.

1. The subsidence of the Colorado River delta: Eng. and Min. Jour., vol. 125, no. 25, pp. 1021–1022, June 23, 1928.

Waldschmidt, William A. See also Johnson, J. H., 9, 12.

1. The largest known beryl crystal: Pahasapa Quart., vol. 9, no. 1, pp. 11–16, 3 pls., 1 fig., December, 1919.
2. Columbite crystals from the Black Hills: Pahasapa Quart., pp. 67–71, 2 pls., 4 figs., February, 1920.
3. A peculiar occurrence of epsomite in the Black Hills: Pahasapa Quart., vol. 9, no. 3, pp. 138–140, 1 fig., April, 1920.
4. The geology and mineralogy of the Custer State Park [Black Hills, South Dakota]: Pahasapa Quart., pp. 199–207, 5 figs., map, June, 1921.
5. Phosgenite from the Terrible mine, near Ilse, Custer County, Colorado: Am. Mineralogist, vol. 8, no. 2, pp. 31–33, February, 1923.
6. Titanium-bearing jefferisite from Westcliffe, Custer County, Colorado: Am. Mineralogist, vol. 9, no. 5, pp. 113–116, May, 1924.
7. The microscope in mining, metallurgy, and geology: Colorado School of Mines, Alumni Mag., vol. 14, no. 8, pp. 8–9, December, 1924.
8. Deformation in ores, Coeur d'Alene district, Idaho: Econ. Geology, vol. 20, no. 6, pp. 573–586, 2 pls., September–October, 1925.

Walker, John Fortune. See also Ellsworth, 10.

1. Geology and mineral deposits of Windermere map area, British Columbia: Canada, Geol. Survey, Mem. 148, 69 pp., 3 figs., 8 pls., map, 1926.
2. Reconnaissance in the Purcell Range west of Brisco, Kootenay district, British Columbia: Canada, Geol. Survey, Summ. Rept., 1925, pt. A, pp. 222–229, map, 1926.
3. (and Evans, C. S.). The geology of the Rocky Mountain trench (abstract): Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 21, p. xcv, 1927.

Walker, R. T.

1. A glacially transported mine: Eng. and Min. Jour.-Press, vol. 118, no. 8, pp. 295–296, 1 fig., August 23, 1924.
2. Deposition of ore in preexisting limestone caves: Am. Inst. Min. and Met. Eng., Tech. Pub. no. 154, 43 pp., 22 figs., 1928.
3. Mineralized volcanic explosion pipes: Eng. and Min. Jour., vol. 126, nos. 23, 24, and 25, pp. 895–898, 939–942, 976–984, 19 figs., December 8, 15, and 22, 1928.

Walker, Thomas Leonard. See also Bastin, 9.

1. Mineralogy of the H. B. mine, Salmo, B. C.: Toronto, Univ., Studies, Geol. ser., no. 10, 25 pp., 10 figs., 1918.
2. Stalactitic barite from Madoc, Ontario: Am. Mineralogist, vol. 4, no. 7, pp. 79–80, 1 pl., July, 1919.
3. Fluorite from Madoc, Ontario: Am. Mineralogist, vol. 4, no. 8, pp. 95–96, 1 fig., August, 1919.
4. Cosalite from Ontario: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 5–10, 1 fig., 1921.

Walker, Thomas Leonard—Continued.

5. (and Thomson, E.). An examination of lillianite and galenobismutite: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 11-15, 1921.
6. Dyscrasite from Cobalt, Ontario: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 20-22, 1921.
7. (and Parsons, A. L.). Rammelsbergite from Cobalt, Ontario: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 27-31, 1 pl., 1921.
8. Epsomite lakes near Ashcroft, British Columbia: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 43-45, 1921.
9. Orthoclase from Penticton, British Columbia: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 46-50, 5 figs., 1921.
10. Ulexite from the maritime provinces: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 54-57, 1 fig., 1921.
11. (and Parsons, A. L.). The dehydration of spencerite: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 58-62, 5 figs., 1921.
12. A chemical study of conglomerates: Toronto, Univ., Studies, Geol. ser., no. 12, pp. 63-68, 1921.
13. Cleavable bornite from Usk, British Columbia: Am. Mineralogist, vol. 6, no. 1, pp. 3-4, January, 1921.
14. Skutterudite from Cobalt, Ontario: Am. Mineralogist, vol. 6, no. 3, pp. 54-56, 1 fig., March, 1921.
15. "Allemontite" from Atlin, British Columbia: Am. Mineralogist, vol. 6, no. 6, pp. 97-99, 1 pl., June, 1921.
16. (and Parsons, A. L.). Tubular amygdaloid from Nova Scotia: Toronto, Univ., Studies, Geol. ser., no. 14, pp. 5-12, 3 pls., 1922. Abstract, Geol. Soc. America, Bull., vol. 33, no. 1, p. 126, March 31, 1922.
17. (and Parsons, A. L.). The zeolites of Nova Scotia: Toronto, Univ., Studies, Geol. ser., no. 14, pp. 13-73, 8 figs., 1922.
18. (and Parsons, A. L.). Notes on some Canadian diopsides: Toronto, Univ., Studies, Geol. ser., no. 14, pp. 74-79, 5 figs., 1922.
19. Dumortierite from Ashby Township, Addington County, Ontario: Toronto, Univ., Studies, Geol. ser., no. 14, pp. 80-83, 1 fig., 1922.
20. Copiapite from Liard Post, British Columbia: Toronto, Univ., Studies, Geol. ser., no. 14, pp. 84-86, 1 fig., 1922.
21. Fibroferite from Quatsino, British Columbia: Toronto, Univ., Studies, Geol. ser., no. 14, pp. 87-88, 1922.
22. Alteration of silicates, by Sonstadt's solution: Am. Mineralogist, vol. 7, no. 6, pp. 100-102, June, 1922.
23. The development of mineralogical methods: Am. Mineralogist, vol. 8, no. 3, pp. 41-46, March, 1923.
24. (and Parsons, A. L.). The North Mountain basalt of Nova Scotia; glaciation, tubular amygdaloid, mordenite, and louisite: Toronto, Univ., Studies, Geol. ser., no. 16, pp. 5-12, 3 pls., 1923.
25. (and Parsons, A. L.). Ellsworthite and associated minerals from Hybla, Ontario: Toronto, Univ., Studies, Geol. ser., no. 16, pp. 13-20, 1 fig., 1923.
26. (and Parsons, A. L.). Hatchettolite and associated minerals from Hybla, Ontario: Toronto, Univ., Studies, Geol. ser., no. 16, pp. 21-24, 1923.
27. (and Parsons, A. L.). Shattering of minerals and rocks about inclusions: Toronto, Univ., Studies, Geol. ser., no. 16, pp. 25-28, 1923.
28. (and Parsons, A. L.). Notes on Canadian minerals—allanite, axinite, columbite, and sillimanite: Toronto, Univ., Studies, Geol. ser., no. 16, pp. 29-37, 1923.

Walker, Thomas Leonard—Continued.

29. Trevorite, a distinct mineral species: Toronto, Univ., Studies, Geol. ser., no. 16, pp. 53–54, 1923.
30. Huronite from Gowganda, Ontario: Toronto, Univ., Studies, Geol. ser., no. 16, pp. 55–57, 1 pl., 1923.
31. Chapmanite, a new hydrous ferrous silicoantimonate, from South Lorrain, Ontario: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 5–8, 1924.
32. (and Parsons, A. L.). Skutterudite and loellingite from the La Rose mine, Cobalt, Ontario: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 9–10, 3 pls., 1924.
33. (and Parsons, A. L.). The arsenates of cobalt, nickel, and iron observed in the silver-bearing veins at Cobalt, Ontario: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 13–17, 1924.
34. Chemical and microscopic examination of ferric and ferrous vein materials, and of chert from the Keeley mine [Cobalt district, Ontario]: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 38–41, 1924.
35. Uraninite from Cardiff Township, Ontario: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 42–45, 1924.
36. (and Parsons, A. L.). Pegmatite minerals from New Ross, Nova Scotia: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 46–50, 1924.
37. The age of some Canadian pegmatites: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 51–54, 1924.
38. Hastingsite from Dungannon Township, Hastings County, Ontario: Toronto, Univ., Studies, Geol. ser., no. 17, pp. 58–61, 1924.
39. (and Parsons, A. L.). Evanescent pink sodalite and associated minerals from Dungannon Township, Ontario: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 5–13, 1925.
40. (and Parsons, A. L.). The characteristics of primary calcite: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 14–17, 1 pl., 1925.
41. (and Parsons, A. L.). Zonal pleochroic twinned phlogopite: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 18–19, 1 pl., 1925.
42. (and Parsons, A. L.). Petzite from the Hollinger mine, Timmins, Ontario: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 39–40, 1925.
43. (and Parsons, A. L.). The rate of oxidation of arsenides of iron, cobalt, and nickel: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 41–48, 1925.
44. Arsenides from the silver veins of South Lorrain, Ontario: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 49–53, 2 pls., 1925.
45. (and Parsons, A. L.). A comparison of the Port Arthur, Cobalt, South Lorrain, and Gowganda silver vein minerals: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 59–62, 1925.
46. (and Parsons, A. L.). New localities for Canadian minerals: Toronto, Univ., Studies, Geol. ser., no. 20, pp. 68–71, 1925.
47. (and Parsons, A. L.). Minerals from the new nepheline syenite area, French River, Ontario: Toronto, Univ., Studies, Geol. ser., no. 22, pp. 5–14, 3 figs., 1 pl., 1926.
48. (and Parsons, A. L.). Zeolites and related minerals from Lake Nipigon, Ontario: Toronto, Univ., Studies, Geol. ser., no. 22, pp. 15–19, 1926.
49. (and Parsons, A. L.). Apatite, lepidomelane, and associated minerals from Faraday Township, Hastings County, Ontario: Toronto, Univ., Studies, Geol. ser., no. 22, pp. 20–25, 4 figs., 1 pl., 1926.

Walker, Thomas Leonard—Continued.

50. (and Parsons, A. L.). Changes in water level and flotation as forces of erosion: Toronto, Univ. Studies, Geol. ser., no. 22, pp. 26-28, 1 fig., 1 pl., 1926.
51. (and Parsons, A. L.). A re-examination of bytownite and huronite: Toronto, Univ., Studies, Geol. ser. no. 24, pp. 5-11, 1927.
52. (and Parsons, A. L.). Beryl and associated minerals from Lyndoch township, Renfrew County, Ontario: Toronto, Univ., Studies, Geol. ser. no. 24, pp. 12-14, 1 fig., 1927.
53. (and Parsons, A. L.). Notes on Canadian minerals, tremolite, clinochumite, stromeyerite, natron, and hexahydrite: Toronto, Univ., Studies, Geol. ser. no. 24, pp. 15-23, 1 fig., 1927.
54. (and Parsons, A. L.). The contact phenomena of the nepheline syenites of Port Coldwell, Ontario: Toronto, Univ., Studies, Geol. ser. no. 24, pp. 28-32, 1927.
55. (and Gerrie, William). Influence of hot natural brines on dolomitization: Toronto, Univ., Studies, Geol. ser. no. 24, pp. 33-36, 1927.
56. Geological hammers: *Am. Mineralogist*, vol. 12, no. 5, pp. 226-227, 1 fig., May, 1927.
57. On the nature of louisite: *Nova Scotian Inst. Sci., Proc. and Trans.*, vol. 16, pp. 35-37, 1 fig., November 21, 1927.

Wallace, Robert Charles. See also Twenhofel, 22, 29.

1. Mining development in northern Manitoba: *Canadian Min. Inst., Monthly Bull.*, no. 83, pp. 287-296, March, 1919; *Trans.*, vol. 22, pp. 329-340 [1920].
2. The northern Manitoba field: *Canadian Min. Jour.*, vol. 40, pp. 549-550, July 23, 1919.
3. The gold discovery at Copper Lake, northern Manitoba: *Canadian Min. Jour.*, vol. 40, pp. 731-733, October 1, 1919.
4. Progress in the northern Manitoba mineral belt: *Canadian Min. Jour.*, vol. 40, pp. 843-846, 1 fig., November 12, 1919.
5. The Flinflon ore body [Manitoba-Saskatchewan]: *Canadian Inst. Min. and Met. Monthly Bull.* no. 106, pp. 106-118, 6 figs., February, 1921; *Trans.*, vol. 24, pp. 99-111, 6 figs. [1922]; *Canadian Min. Jour.*, vol. 42, no. 9, pp. 170-174, 6 figs., March 4, 1921. Reissued with addendum by Industrial Development Board of Manitoba, 15 pp., 6 figs., August, 1927.
6. The search for oil in the Pasquia Hills: *Canadian Min. Jour.*, vol. 42, no. 27, pp. 540-542, July 8, 1921; *Canadian Inst. Min. and Met., Monthly Bull.* no. 113, pp. 791-795, September, 1921.
7. The gold discovery at Elbow Lake, Manitoba: *Canadian Min. Jour.*, vol. 42, no. 36, p. 720, September 9, 1921.
8. Secondary processes in some pre-Cambrian ore bodies: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 16, sec. 4, pp. 169-174, 1922.
9. The distribution of the colloidal products of weathering: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 17, sec. 4, pp. 69-77, May, 1923.
10. Manitoba's contribution to Canada's mining opportunities: *Canadian Inst. Min. and Met., Monthly Bull.*, no. 143, pp. 90-99, 2 figs. (maps), March, 1924.
11. (and Maynard, J. E.). The clays of the Lake Agassiz basin: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 18, sec. 4, pp. 9-30, 7 figs., 1 pl., May, 1924.

Wallace, Robert Charles—Continued.

12. An unusual occurrence of cyanite [Reed-Wekusko map-area, northern Manitoba]: *Am. Mineralogist*, vol. 9, no. 6, pp. 129–135, 2 figs., June, 1924.
13. The mineral resources of Manitoba: Manitoba, Industrial Development Board, 48 pp., illus., map, Winnipeg, 1925.
14. The geological formations of Manitoba. 58 pp., pls., map, published by the Natural History Society of Manitoba, 1925.
15. Relationships in mineral deposits in northwestern Manitoba: *Econ. Geology*, vol. 20, no. 5, pp. 431–441, 1 fig., August, 1925.
16. Mineral deposits of Hudson Bay territory (with discussion): *Canadian Inst. Min. and Met., Bull.*, no. 164, pp. 1165–1176, 3 figs., December, 1925; *Trans.*, vol. 28, pp. 301–310 [1926].
17. (and Baker, W. F., and Ward, G.). The Red River as an erosive agent: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 20, pt. 2, sec. 4, pp. 149–167, 3 figs., 1926.
18. (and Greer, L.). The nonmetallic mineral resources of Manitoba. 93 pp., 9 figs., 5 pls., Industrial Development Board of Manitoba, 1927.
19. The mineral resources of Manitoba (second edition): Manitoba, Industrial Development Board, 58 pp., 12 pls. (incl. maps), Winnipeg, 1927.
20. Varve materials and banded rocks: *Roy. Soc. Canada, Trans.*, 3d ser., vol. 21, sec. 4, pp. 109–118, 1 fig., 2 pls., May, 1927; abstract, p. xciii, 1927.
21. (and Pentland, A., and Quinn, R. F.). Paleozoic, Mesozoic, and Pleistocene sands in Manitoba (abstract): *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 21, p. xciv, 1927.
22. Copper-zinc and gold mineralization in Manitoba: *Canadian Min. and Met. Bull.*, no. 190, pp. 264–273, 7 figs., February, 1928; *Canadian Inst. Min. and Met., Trans.*, vol. 31, pp. 42–56, 7 figs. [1929]; *Canadian Min. Jour.*, vol. 49, no. 8, pp. 170–172, 3 figs., February 24, 1928.
23. (and McCartney, G. C.). Heavy minerals in sand horizons in Manitoba and eastern Saskatchewan: *Roy. Soc. Canada, Proc. and Trans.*, 3d ser., vol. 22, sec. 4, pp. 199–214, 1 fig., 4 pls., May, 1928.

Walter, Otto Theodore.

1. Upper Cambrian trilobites [of Iowa] (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 128, March 31, 1921.
2. An Iowa Cambrian eurypterid (abstract): *Iowa Acad. Sci., Proc.* 1922, vol. 29, pp. 126–127 [1924?].
3. Trilobites of Iowa and some related Paleozoic forms: *Iowa Geol. Survey*, vol. 31, pp. 167–388, 6 figs., 18 pls. [1926?].

Walton, John.

1. On the structure of a Middle Cambrian Alga from British Columbia (*Marpolia spissa* Walcott): *Cambridge Philos. Soc., Proc., Biol. Sci.*, vol. 1, no. 1, pp. 59–62, 1 fig., 1 pl., August, 1923.

Wandke, Alfred. See also Wade, W. R., 1, 2.

1. Geology of the Portsmouth basin, Maine and New Hampshire (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 138, March 31, 1920.
2. Intrusive rocks of the Portsmouth Basin, Maine and New Hampshire: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 139–158, 1 fig., August, 1922.
3. A petrologic study of the Cape Neddick gabbro [York County, Maine]: *Am. Jour. Sci.*, 5th ser., vol. 4, pp. 295–304, 1 fig., October, 1922.

Wandke, Alfred—Continued.

4. (and Hoffman, Robert). A study of the Sudbury [Ontario] ore deposits: *Econ. Geology*, vol. 19, no. 2, pp. 169-204, 3 figs., 2 pls., March, 1924.
5. The Caridad mine, Sonora, Mexico: *Econ. Geology*, vol. 20, no. 4, pp. 311-318, June-July, 1925.
6. Shattering by replacement: *Econ. Geology*, vol. 20, no. 6, pp. 605-607, 1 fig., September-October, 1925.
7. Molecular migration and mineral transformation: *Econ. Geology*, vol. 21, no. 2, pp. 166-171, March-April, 1926.
8. (and Martínez, Juan). The Guanajuato mining district, Guanajuato, Mexico: *Econ. Geology*, vol. 23, no. 1, pp. 1-44, 5 figs., January, 1928.

Wanless, Harold Rollin.

1. Lithology of the White River sediments: *Am. Philos. Soc., Proc.*, vol. 61, no. 3, pp. 184-203, 1 fig., 2 pls., 1922. Abstract, *Science*, new ser., vol. 55, p. 654, June 16, 1922.
2. Notes on sand calcite from South Dakota: *Am. Mineralogist*, vol. 7, no. 5, pp. 83-86, 2 figs., May, 1922.
3. The stratigraphy of the White River beds of South Dakota: *Am. Philos. Soc., Proc.*, vol. 62, no. 4, pp. 190-269, 10 figs., 9 pls., 1923.
4. Physiographic significance of post-Miocene gravels of western South Dakota (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 140, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 1, p. 80, February, 1925.
5. Stratigraphy and paleontology of the Pennsylvanian of northwestern Illinois (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 133-134, March 30, 1927; *Pan-Am. Geologist*, vol. 47, no. 1, p. 77, February, 1927.
6. Oil possibilities of the Alexis quadrangle, Mercer and Warren counties, Illinois: *Illinois, State Geol. Survey, Press Bull. ser., Illinois Petroleum* no. 8, pp. 1-7, 3 figs., April 16, 1927.
7. Pleistocene and recent history of Alexis quadrangle [Illinois]: *Illinois State Acad. Sci., Trans.*, vol. 20, pp. 254-260, March, 1928.

Wanner, Henry E.

1. Some faunal remains from the Trias of York County, Pennsylvania: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 73, pt. 1, pp. 25-37, 6 figs., 3 pls., 1921.
2. Some additional faunal remains from the Trias of York County, Pennsylvania: *Acad. Nat. Sci. Philadelphia, Proc.*, vol. 78, 1926, pp. 21-28, 4 figs., 1 pl., 1927.

Ward, Freeman. See also Wilson, R. A., 3.

1. Biennial report of the State geologist, 1916-1918: *South Dakota State Geol. and Nat. Hist. Survey, Bull.* 8, pp. 179-189, July, 1918.
2. The possibilities of oil and gas in Harding County: *South Dakota Geol. and Nat. Hist. Survey, Circular* no. 4, 8 pp., October, 1918.
3. Chalk: *South Dakota Geol. and Nat. Hist. Survey, Circular* 6, 4 pp., November, 1919.
4. Report of the State geologist [of South Dakota], 1918-1920. 15 pp., *Daily Leader*, Madison, S. D. [1920].
5. The Quaternary geology of the New Haven region, Connecticut: *Connecticut State Geol. and Nat. Hist. Survey, Bull.* no. 29, 78 pp., 9 pls. (incl. maps), 17 figs., 1920.

Ward, Freeman—Continued.

6. The possibilities of oil in eastern Pennington County: South Dakota Geol. and Nat. Hist. Survey, Circular 8 (South Dakota Univ., Bull., ser. 21, no. 7), 11 pp., 2 figs., October, 1921.
7. Annual report of the State geologist, State of South Dakota, 1920-1922. 32 pp., Pierre, S. D., 1922.
8. The geology of a portion of the Badlands: South Dakota Geol. and Natural Hist. Survey, Bull. 11, pp. 1-59, 11 figs., 17 pls. (incl. map), August, 1922.
9. (and Wilson, R. A.). The possibilities of oil in western Dewey County: South Dakota Geol. and Nat. Hist. Survey, Circular 9, 10 pp., 4 figs., September, 1922.
10. Dome structures in South Dakota: Pan-Am. Geologist, vol. 39, no. 2, pp. 149-151, 2 pls., March 30, 1923.
11. Note on mud cracks: Am. Jour. Sci., 5th ser., vol. 6, pp. 308-309, 1 fig., October, 1923.
12. The Lance problem in South Dakota: Am. Jour. Sci., 5th ser., vol. 7, pp. 65-68, January, 1924; abstract, Geol. Soc. America, Bull., vol. 30, no. 1, p. 71, March, 1923.
13. (and others). The natural resources of South Dakota: South Dakota Geol. and Nat. Hist. Survey, Circular 16, 28 pp., April, 1924.
14. (and Moulton, Gail F.). Field conditions in southern Haakon County: South Dakota Geol. and Nat. Hist. Survey, Circular 17, 4 pp., May, 1924.
15. The biennial report of the State geologist, 1922-1924: South Dakota Geol. and Nat. Hist. Survey, 24 pp. [1925].
16. Structures in northern Haakon County: South Dakota Geol. and Nat. Hist. Survey, Circular 22, 15 pp., 3 figs., March, 1925.
17. The structure of western South Dakota: South Dakota Geol. and Nat. Hist. Survey, Circular 25, 7 pp., map, October, 1925.
18. The biennial report of the State geologist, 1924-1926: South Dakota Geol. and Nat. Hist. Survey, 22 pp. [1926?].
19. The position of the Interior formation [South Dakota]: Am. Jour. Sci., 5th ser., vol. 11, pp. 350-352, 1 fig., April, 1926.

Ward, G. See Wallace, 17.

Waring, Gerald Ashley.

1. Ground water in the San Jacinto and Temecula basins, California: U. S. Geol. Survey, Water-Supply Paper 429, 113 pp., 14 pls. (incl. maps), 15 figs., 1919. Abstract, Washington Acad. Sci., Jour., vol. 10, no. 16, pp. 472-473, October 4, 1920.
2. Ground water in the Meriden area, Connecticut: U. S. Geol. Survey, Water-Supply Paper 449, 83 pp., 10 figs., 7 pls. (incl. maps), 1920.
3. Ground water in Pahrump, Mesquite, and Ivanpah valleys, Nevada and California: U. S. Geol. Survey, Water-Supply Paper 540, pp. 51-81, 5 pls., (incl. maps), 2 figs., 1920.
4. Use of the sketching case in geologic work: Am. Assoc. Petroleum Geologists, Bull., vol. 8, no. 5, pp. 672-674, 1 fig., September-October, 1924.
5. (and Carlson, C. G.). Geology and oil resources of Trinidad, British West Indies: Am. Assoc. Petroleum Geologists, Bull., vol. 9, no. 6, pp. 1000-1008, 1 fig., 1 pl., September, 1925.
6. The geology of the Island of Trinidad, British West Indies: Johns Hopkins Univ., Studies in Geology, no. 7, 180 pp., 1 fig., 20 pls. 1926.

Warner, Charles Albert.

1. Field mapping for the oil geologist. 145 pp., 40 figs., New York, John Wiley & Sons, Inc., 1921.

Warner, Thor.

1. An anticlinorium on the southern California coast: Oil Age, Los Angeles, California, vol. 19, no. 26, pp. 12-14, 3 figs., June 27, 1923.
2. Lindero anticline, Ventura County, California: Min. and Oil Bull., vol. 10, no. 6, pp. 589, 591, 652, June, 1924.

Warren, Charles Hyde.

1. A manual of determinative mineralogy. 163 pp., New York, McGraw-Hill Book Company, 1921.
2. (and McKinsty, Hugh E.). The granites and pegmatites of Cape Ann, Massachusetts: Am. Acad. Arts and Sci., Proc., vol. 59, no. 14, pp. 315-357, 5 pls., September, 1924.

Warren, Helen Ann.

1. Survey of the life of Louis Agassiz; the centenary of the glacial theory: Sci. Monthly, vol. 27, no. 4, pp. 355-366, October, 1928.

Warren, Percival S.

1. A Kinderhook fauna from Nordegg, Alberta: Am. Jour. Sci., 5th ser., vol. 10, pp. 448-450, November, 1925.
2. The invertebrate fauna of the upper part of the Edmonton formation on the Red Deer River, Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, pt. 1, sec. 4, pp. 1-7, 1 pl., 1926.
3. A marine fauna in the Birch Lake sandstone, Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 20, pt. 1, sec. 4, pp. 9-14, 1 pl., 1926.
4. Banff area, Alberta: Canada, Geol. Survey, Mem. 153, 94 pp., 7 pls., map, 1927. [No. 2121]
5. Geology and oil prospects in the vicinity of Riverhurst, Saskatchewan: Canada, Geol. Survey, Summ. Rept., 1926, pt. B, pp. 39-42, 1927.
6. A new cycad from the Kootenay coal measures of Alberta: Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 47-50, 2 pls., March, 1927.
7. The Palaeozoics of the Crowsnest Pass, Alberta: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 22, sec. 4, pp. 109-120, 1 pl., March, 1928.
8. (and Rutherford, R. L.). Fossil zones in the Colorado shale of Alberta: Am. Jour. Sci., 5th ser., vol. 16, pp. 129-136, August, 1928.

Warren, Van Court. See Johnson, H. R., 1.

Warthin, Aldred Scott, jr.

1. Fossil fishes from the Triassic of Texas: Michigan, Univ., Mus. Paleontology, Contr., vol. 3, no. 2, pp. 15-18, 1 pl., November 10, 1928.

Washburne, Chester Wesley. See also Melcher, 1; Woodruff, 1.

1. Some physical principles of the origin of petroleums: Am. Assoc. Petroleum Geologists, Bull., vol. 3, pp. 345-362, 1919.
2. A discussion of "Notes on principles of oil accumulation" by A. W. McCoy: Jour. Geology, vol. 28, no. 4, pp. 366-370, May-June, 1920.
3. Oil field brines: Mining and Metallurgy, no. 164, p. 27, August, 1920 (abstract); Am. Inst. Min. and Met. Eng., Trans. [preprint no. 1010], 13 pp., 1920; discussion by R. V. A. Mills, E. DeGolyer, W. E. Pratt, R. A. Conkling, and C. W. Washburne [preprint] no. 1038, pp. 71-84, January, 1921.

Washburne, Chester Wesley—Continued.

4. Oil-field brines: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 65, pp. 269–294, 1921.
5. Colin C. Rae's "Organic material of carbonaceous shales": *Am. Assoc. Petroleum Geologists*, vol. 7, no. 4, pp. 440–442, July–August, 1923.
6. Capillary relationships of oil and water: *Econ. Geology*, vol. 18, no. 6, pp. 598–600, September, 1923.
7. California oil field waters (discussion): *Econ. Geology*, vol. 20, no. 4, pp. 395–396, June–July, 1925.
8. Relation of earth temperatures to buried hills and anticlinal folds (discussion): *Econ. Geology*, vol. 21, no. 4, pp. 397–399, June–July, 1926.
9. Intersection of faults (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 175, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, pp. 78–79, February, 1928.
10. Relation of faults to folds (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 175–176, March, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 79, February, 1928.
11. Epianticlinal faults of Elk Basin, Wyoming (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 176, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, pp. 79–80, February, 1928.
12. Curvature of faults (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 176–177, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 1, p. 80, February, 1928.
13. Velocity of slipping on normal faults (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, p. 177, March 30, 1928; *Pan-Am. Geologist*, vol. 49, no. 2, p. 139, March, 1928.
14. Origin of normal faults (abstract): *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 263–264, March 30, 1928.
15. The origin of normal faults (abstract): *Washington Acad. Sci., Jour.*, vol. 18, no. 12, pp. 346–350, June 19, 1928.

Washington, Henry Stephens. See also Adams, L. H., 4; *Am. Geophysical Union*, 1; Aourousseau, 1; Bowie, 2, 4; Clarke, F. W., 3, 4; Wyckoff, 5.

1. Manual of the chemical analysis of rocks. Third edition, 271 pp., New York, John Wiley & Sons, 1919.
2. Italite, a new leucite rock: *Am. Jour. Sci.*, 4th ser., vol. 50, pp. 33–47, July, 1920.
3. The problems of volcanology: *Nat. Acad. Sci., Proc.*, vol. 6, no. 10, pp. 583–592, October 15, 1920. *Nat. Research Council, Reprint and Circular Ser.*, no. 11, pp. 583–592, 1920.
4. The chemistry of the earth's crust: *Franklin Inst., Jour.*, vol. 190, no. 6, pp. 757–815, 6 figs., December, 1920. *Smithsonian Inst., Ann. Rept.*, 1920, pp. 269–319, 6 figs., 1922. Abstract, *Washington Acad. Sci., Jour.*, vol. 11, no. 17, p. 420, October 19, 1921.
5. The lavas of the Hawaiian volcanoes: *Papers from the Geophysical Laboratory, Carnegie Institution of Washington*, no. 434, 12 pp. [reprint from], *Hawaiian Annual for 1922*, 1921.
6. The chemistry of the Pacific volcanoes; the limitations of our knowledge: *Pan-Pacific Scientific Conference, First, Proc.*, Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, pp. 325–345, 1921.
7. Remarks on volcanoes: *Pan-Pacific Scientific Conference, First, Proc.*, Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, pp. 361–368, 1921.

Washington, Henry Stephens—Continued.

8. Ocean currents and geological change: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, p. 504, 1921.
9. Rocks of Kohala and Kea, Hawaii (abstract): Geol. Soc. America, Bull., vol. 3, no. 1, p. 58, March 31, 1921.
10. Volcanology of the Hawaiian Islands (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 72, March 31, 1921.
11. (and Merwin, H. E.). Aphthitalite from Kilauea: Am. Mineralogist, vol. 6, no. 8, pp. 121-125, August, 1921.
12. The granites of Washington, D. C.: Washington Acad. Sci., Jour., vol. 11, no. 19, pp. 459-470, 1 fig., November 19, 1921.
13. Obsidian from Copan [Honduras] and Chichen Itza [Yucatan]: Washington Acad. Sci., Jour., vol. 11, no. 20, pp. 481-487, 1 fig., December 4, 1921.
14. Augite of Haleakala, Maui, Hawaiian Islands: Am. Jour. Sci., 5th ser., vol. 3, pp. 117-122, February, 1922.
15. Isostasy and rock density: Geol. Soc. America, Bull., vol. 33, no. 2, pp. 375-410, 2 figs., June 30, 1922.
16. A worked jade pebble from Copan [Honduras]: Washington Acad. Sci., Jour., vol. 12, no. 17, pp. 387-391, 1 fig., October 19, 1922.
17. Deccan traps and other plateau basalts: Geol. Soc. America, Bull., vol. 33, no. 4, pp. 765-804, 2 figs., November 2, 1922; abstract, no. 1, p. 146, March 31, 1922.
18. The jades of middle America: Nat. Acad. Sci., Proc., vol. 8, no. 11, pp. 319-326, 1 fig., November, 1922.
19. (and Merwin, H. E.). Note on enstatite, hypersthene, and actinolite: Am. Mineralogist, vol. 8, no. 4, pp. 63-67, April, 1923.
20. Petrology of the Hawaiian Islands; I, Kohala and Mauna Kea, Hawaii: Am. Jour. Sci., 5th ser., vol. 5, pp. 465-502, 1 fig., June, 1923.
21. Petrology of the Hawaiian Islands; II, Hualalai and Mauna Loa: Am. Jour. Sci., 5th ser., vol. 6, pp. 100-126, August, 1923.
22. Petrology of the Hawaiian Islands; III, Kilauea and general petrology of Hawaii: Am. Jour. Sci., 5th ser., vol. 6, pp. 338-367, October, 1923.
23. Petrology of the Hawaiian Islands; IV, The formation of aa and pahoehoe: Am. Jour. Sci., 5th ser., vol. 6, pp. 409-423, 3 figs., November, 1923.
24. Comagmatic regions and the Wegener hypothesis: Washington Acad. Sci., Jour., vol. 13, no. 15, pp. 339-347, September 19, 1923.
25. The density of the earth as calculated from the densities of Mauna Kea and Haleakala: Washington Acad. Sci., Jour., vol. 13, no. 21, pp. 453-456, December 19, 1923.
26. (and Merwin, H. E.). On babingtonite: Am. Mineralogist, vol. 8, no. 12, pp. 215-223, 1 fig., December, 1923.
27. The densities of deep-seated material of the earth's crust, as determined by chemical analysis, and the bearing of such densities on the theory of isostasy (abstract): Nat. Research Council, Bull., vol. 7, pt. 5, no. 41, p. 92, January, 1924.
28. (and Merwin, H. E.). Acmite and aegirite (abstract): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 109-110, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 154, March, 1924.
29. The radial distribution of certain elements in the earth: Washington Acad. Sci., Jour., vol. 14, no. 19, pp. 435-442, November 19, 1924.

Washington, Henry Stephens—Continued.

30. The modern study of minerals: *Am. Mineralogist*, vol. 10, no. 3, pp. 45–52, March, 1925.
31. The chemical composition of the earth: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 351–378, 2 figs., May, 1925.
32. What the earth is made of: *Sci. Am.*, vol. 133, pp. 10–11, 3 figs., July, 1925.
33. (and Keyes, Mary G.). Petrology of the Hawaiian Islands, V; The Leeward Islands: *Am. Jour. Sci.*, 5th ser., vol. 12, pp. 336–352, October, 1926.
34. The chemical composition of the earth, of meteorites, and of the sun's atmosphere: *Nat. Research Council, Bull.*, vol. 11, pt. 2, no. 56, pp. 30–32, November, 1926; abstract, *Am. Jour. Sci.*, 5th ser., vol. 12, p. 272, September, 1926.
35. (and Merwin, H. E.). The acmitic pyroxenes: *Am. Mineralogist*, vol. 12, no. 6, pp. 233–252, June, 1927.
36. (and Keyes, Mary G.). Rocks of the Galapagos Islands [and of Hawaii]: *Washington Acad. Sci., Jour.*, vol. 17, no. 21, pp. 538–543, December 19, 1927.
37. (and Keyes, Mary G.). Petrology of the Hawaiian Islands, VI; Maui: *Am. Jour. Sci.*, 5th ser., vol. 15, pp. 199–220, March, 1928.
38. Present volcanic activity over the earth (abstract): *Washington Acad. Sci., Jour.*, vol. 18, no. 19, pp. 509–510, November 19, 1928.

Washington, Geological Survey.

1. The biennial report of the Board of Geological Survey of the State of Washington for the term 1917–1919, 26 pp., 2 pls. (maps), Olympia, Wash., 1919.
2. The biennial report of the Board of Geological Survey of the State of Washington for the term 1919–1921, 29 pp., Olympia, 1921.

Wasson, Isabel B. See Wasson, Theron, 2.

Wasson, Theron.

1. Lost Lake salt dome, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 6, p. 633, June, 1927.
2. (and Wasson, Isabel B.). Cabin Creek field, West Virginia: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 7, pp. 705–719, 5 figs., 1 pl., July, 1927.

Watanabé, Manjirô.

1. Zonal precipitation of ores from a mixed solution: *Econ. Geology*, vol. 19, no. 6, pp. 497–503, 1 fig., September–October, 1924.

Waterman, Charles.

1. An analytical examination of South Dakota Cretaceous shales: *Black Engineer*, vol. 15, no. 3, pp. 166–171, May, 1927.

Waters, Aaron.

1. Concerning the differentiation of a lamprophyric magna at Corbaley Canyon, Washington: *Jour. Geology*, vol. 35, no. 2, pp. 158–170, 3 figs., February–March, 1927.
2. A structural and petrographic study of the Glass Buttes, Lake County, Oregon: *Jour. Geology*, vol. 35, no. 5, pp. 441–452, 1 fig., July–August, 1927.

Waters, Everett O. See Longwell, 2.

Waters, James A. See also Cushman, 42, 45.

1. A group of Foraminifera from the Dornick Hills formation of the Ardmore Basin [Carter County, Oklahoma]: *Jour. Paleontology*, vol. 1, no. 2, pp. 129-133, 1 pl., August, 1927.
2. A group of Foraminifera from the Canyon division of the Pennsylvanian formation in Texas: *Jour. Paleontology*, vol. 1, no. 4, pp. 271-275, 1 pl., January, 1928.

Watson, E. H.

1. San Juan area seems to afford most promising opportunity for oil exploration in Utah: *Petroleum World*, Los Angeles, vol. 12, no. 5, pp. 62-63, 68, 1 fig., May, 1927.

Watson, John Wilbur.

1. Abstraction of potassium during sedimentation. Diss., Univ. Virginia, 30 pp. [no date, 1913?].

Watson, Thomas Leonard, 1871-1924. See also Bayley, 3; Ries, 4, 11.

1. Administrative report of the State geologist for the biennial period 1916-1917: *Virginia Geol. Survey*, 36 pp., Charlottesville, 1918.
2. Cerium, its occurrence and application: *Mineral Foote-Notes*, vol. 3, no. 3, pp. 4-10, May-June, 1919.
3. Glass-sand resources of Virginia: *Am. Ceramic Soc., Jour.*, vol. 2, no. 10, pp. 794-803, October, 1919.
4. Earthquake in Warren and Rappahannock counties, Virginia, September 5, 1919: *Seismol. Soc. America, Bull.*, vol. 9, no. 4, pp. 128-134, 4 figs., December, 1919.
5. Alabama meeting of the Association of American State Geologists: *Science*, new ser., vol. 51, pp. 19-20, January 2, 1920.
6. Note on the composition of allanite: *Am. Mineralogist*, vol. 5, no. 1, pp. 6-7, January, 1920.
7. Bearing of experimental data on the formation of smithsonite (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 161-162, March 31, 1920.
8. Administrative report of the State geologist for the biennial period 1918-1919. 31 pp., map, *Virginia Geol. Survey*, 1920.
9. Petrography of a lamprophyre dike cutting a pyrite body in Boyd Smith mine, Louisa County, Virginia: *Washington Acad. Sci., Jour.*, vol. 11, no. 14, pp. 341-345, August 19, 1921.
10. Lazulite of Graves Mountain, Georgia, with notes on other occurrences in the United States: *Washington Acad. Sci., Jour.*, vol. 11, no. 16, pp. 386-391, October 4, 1921.
11. Rutile-ilmenite intergrowths: *Am. Mineralogist*, vol. 7, no. 11, pp. 185-188, November, 1922.
12. Geology of a vein occurrence of rutile-ilmenite in a new locality [Amelia County, Virginia]: *Washington Acad. Sci., Jour.*, vol. 12, no. 20, pp. 447-454, December 4, 1922.
13. A contribution to the geology of the Virginia emery deposits: *Econ. Geology*, vol. 18, no. 1, pp. 53-76, 5 figs. (incl. map), 1 pl., January-February, 1923.
14. The Sharps meteorite, Richmond County, Virginia: *U. S. Nat. Mus., Proc.*, vol. 64, art. 2, 4 pp., 2 pls., 1923.
15. Native copper deposits of the south Atlantic States compared with those of Michigan: *Econ. Geology*, vol. 18, no. 8, pp. 732-752, 1 fig. (map), December, 1923.

Watson, Thomas Leonard—Continued.

16. Thermal springs of the southeast Atlantic States: *Jour. Geology*, vol. 32, no. 5, pp. 373–384, 2 figs., July–August, 1924.
17. The mineral resources of Virginia: *The South's Development, Manufacturers Record*, vol. 86, no. 24, pt. 2, pp. 426–428, December 11, 1924.
18. Hoegbomite from Virginia: *Am. Mineralogist*, vol. 10, no. 1, pp. 1–9, 3 figs., January, 1925.

Watts, Arthur S.

1. (and others). The fire clays of Maryland: *Maryland Geol. Survey*, vol. 11, pp. 289–539, 107 figs., 4 pls., 1922.

Watts, William L.

1. Geological structures favorable to the accumulation of petroleum: *Southern California Acad. Sci., Bull.*, vol. 19, pt. 1, pp. 13–20, 7 figs., January, 1920.

Watts, William Whitehead.

1. Geology in the service of man: *Canadian Min. Jour.*, vol. 45, no. 33, pp. 792–795, August 15, 1924; *Pan-Am. Geologist*, vol. 42, no. 1, pp. 1–29, August, 1924; *British Assoc. Adv. Sci., Rept. 92d Meeting*, pp. 89–108, 1925; *Smithsonian Inst., Ann. Rept.*, 1925, pp. 271–296, 1926.

Weaver, Charles Edwin.

1. Geological history of Washington. *In Northwest Mines Handbook*, vol. 1, pp. 143–145, published by Sidney Norman, Spokane, Washington, 1918.
2. The mineral resources of Stevens County: *Washington Geol. Survey, Bull.*, no. 20, 350 pp., 20 pls. (incl. map), 14 figs., 1920.
3. (and Palmer, Katherine Van Winkle). Fauna from the Eocene of Washington: *Washington, Univ., Pub. in Geology*, vol. 1, no. 3, 55 pp., 5 pls., June, 1922. Critical notes on the paper, by G. Dallas Hanna, *Nautilus*, vol. 36, no. 4, pp. 141–142, April, 1923.

Webb, Arthur Lovat.

1. The future of Canada as a gold producer: *Min. Mag.*, vol. 28, no. 3, pp. 150–155, 3 figs., March, 1923.

Webb, W. S. See Funkhouser, 1.

Webbert, C. W. See Pennsylvania, 1.

Webster, Hugh B. See Collingwood, 1.

Weed, Walter Harvey.

1. West Shining Tree gold prospects [Ontario]: *Eng. and Min. Jour.-Press*, vol. 116, no. 2, pp. 68–69, 1 fig., July 14, 1923.
2. Superficial copper deposits: *Eng. and Min. Jour.-Press*, vol. 119, no. 15 p. 605, April 11, 1925.
3. Veindikes of the Engineer mine, near Atlin, British Columbia: *Eng. and Min. Jour.-Press*, vol. 119, no. 26, pp. 1037–1040, 7 figs., June 27, 1925.

Weeks, Albert W.

1. Some experimental work testing the hydraulic theory of oil migration and accumulation by means of the downward circulation of water: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 8, pp. 1143–1151, 1 fig., November, 1925.
2. Methods of plotting well logs: *Econ. Geology*, vol. 20, no. 7, pp. 693, November, 1925.

Weeks, Fred Boughton.

1. Possibilities of the Calico mining district [San Bernardino County, California]: Eng. and Min. Jour.-Press, vol. 119, no. 19, pp. 757-763, 3 figs., May 9, 1925.

Weeks, Herbert J.

1. Oil and water possibilities of parts of Delta and Mesa counties, Colorado: Colorado Geol. Survey, Bull. 28, 46 pp., 7 figs., 2 pls. (maps), 1925.

Weeks, Ludlow J.

1. Geology and ore deposits of Stirling area, Richmond County, Nova Scotia: Canada, Geol. Survey, Summ. Rept., 1924, pp. 199-217, 2 figs., 1 pl., 1926.
2. The geology of parts of eastern Arctic Canada: Canada, Geol. Survey, Summ. Rept., 1925, pt. C, pp. 136-141, 2 pls., 1927.
3. Cumberland Sound Area, Baffin Island: Canada, Geol. Survey, Summ. Rept., 1927, pt. C, pp. 83-95, 2 pls., map, 1928.

Wegeman, Carroll Harvey.

1. Notes on the oil fields of Wyoming: Am. Assoc. Petroleum Geologists, Bull., vol. 4, no. 1, pp. 37-42, 1920. Eng. and Min. Jour., vol. 109, pp. 1417-1419, June 26, 1920.
2. (and Howell, R. W., and Dobbin, C. E.). The Pumpkin Buttes coal field, Wyoming: U. S. Geol. Survey, Bull. 806, pp. 1-14, 1 fig., 5 pls., October 8, 1928.

Wegener, Alfred.

1. The origin of continents and oceans. Translated from the third German edition by J. G. A. Skerl. 212 pp., 44 figs., New York, E. P. Dutton and Company, n. d. [1923?].
2. Two notes concerning my theory of continental drift. *In* Theory of continental drift, pp. 97-103, Am. Assoc. Petroleum Geologists, 1928.

Weidman, Samuel.

1. Probability of Pennsylvanian glaciation of the Arbuckle and Wichita mountain regions (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, p. 91, March 31, 1921.
2. Evidence of glaciation in the Arbuckle region: Oklahoma Acad. Sci., Proc., vol. 2 (Oklahoma, Univ., Bull., new ser. no. 247), pp. 73-74, October 1, 1922.
3. Physiographic history of the Arbuckle Mountains: Oklahoma Acad. Sci., Proc., vol. 2 (Oklahoma, Univ., Bull., new ser. no. 247), pp. 74-77, October 1, 1922.
4. Was there Pennsylvanian-Permian glaciation in the Arbuckle and Wichita mountains of Oklahoma?: Jour. Geology, vol. 31, no. 6, pp. 466-489, 16 figs., September-October, 1923.
5. Tri-State lead and zinc district: Bureau Monthly, published by Bureau of Geology. Norman, Okla., vol. 1, no. 1, p. 19, 2 figs., April, 1925.
6. Lichens as weathering agents of limestone: Oklahoma Acad. Sci., Proc., vol. 5, 1925 (Oklahoma, Univ., Bull., new ser. no. 330, Univ. Studies no. 22), pp. 147-150, April 1, 1926.

Weigel, William Melvin.

1. Mining ocher at Cartersville, in Georgia: Eng. and Min. Jour.-Press, vol. 116, no. 20, pp. 854-856, 2 figs., November 17, 1923.
2. Technology and uses of silica and sand: U. S., Bur. Mines, Bull. 266, 204 pp., 50 figs., 1927.

Weinig, A. J.

1. Angular fragments in veins: Eng. and Min. Jour., vol. 122, no. 26, pp. 1020-1021, 1 fig., December 25, 1926.

Weirich, T. E. See Kirk, 2.

Weitzberg, Fritz.

1. El ventísquero del Popocatepetl: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 41, no. 2-3, pp. 65-90, 9 pls., November-December, 1922.

Weld, Christopher Minot.

1. [Iron-ore resources of] Cuba: Am. Inst. Min. and Met. Eng., Trans., vol. 61, pp. 124-130, 1920.

Weller, James Marvin. See also Moulton, 11.

1. The geology of Edmonson County: Kentucky Geol. Survey, Ser. 6, vol. 28, 246 pp., 56 figs. and pls., 1927.

Weller, Stuart, 1871-1927. See also Roberts, 5.

1. (with the collaboration of Charles Butts, L. W. Currier, and R. D. Salisbury). The geology of Hardin County and the adjoining part of Pope County: Illinois State Geol. Survey, Bull. no. 41, 416 pp., 30 figs., 11 pls., 1920.
2. The Chester series in Illinois: Jour. Geology, vol. 28, nos. 4 and 5, pp. 281-303, 395-416, 1 fig., 1920; abstract, Science, new ser., vol. 51, p. 494, May 14, 1920.
3. Fossils as aids in teaching stratigraphy, or applied paleontology: Geol. Soc. America, Bull., vol. 31, no. 3, pp. 383-388, September 30, 1920.
4. Geology of the Golconda quadrangle; a detailed report on the stratigraphy and structure of that portion of the Golconda quadrangle lying in Kentucky: Kentucky Geol. Survey, Ser. 6, vol. 4, 148 pp., 1 fig., 1921.
5. Oil and gas possibilities in Caldwell County, Kentucky: Kentucky Geol. Survey, series 6, vol. 6, pp. 221-231, 2 figs., 1921.
6. Some events in the geological history of southern Illinois: Illinois State Acad. Sci., Trans., vol. 14, pp. 21-35 [1922].
7. Geology of the Princeton quadrangle: Kentucky Geol. Survey, Ser. 6, vol. 10 pp. 1-105, 12 figs., section and map, 1923.
8. Problematic fossil from the Silurian of Illinois (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, p. 217, March 30, 1925.
9. A new type of Silurian worm: Jour. Geology, vol. 33, no. 5, pp. 540-544, 1 fig., July-August, 1925.
10. Map of the structural geology (fault pattern) of the Golconda and Cave in Rock quadrangles in Kentucky: Kentucky Geol. Survey, ser. 6, 1925. Scale 1=62,500.
11. The making of southern Illinois: Illinois State Acad. Sci., Trans., vol. 19, pp. 27-49, 1926.
12. Faunal zones in the standard Mississippian section: Jour. Geology, vol. 34, no. 4, pp. 320-335, May-June, 1926.
13. Fossil collecting in the Mississippian formations of the Mississippi Valley: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 26, no. 5, pp. 487-495, 12 figs., September-October, 1926.
14. Map of the areal and structural geology (fault pattern) of Livingston County, Kentucky, by Stuart Weller and others: Kentucky Geol. Survey, Ser. 6, 1926. Scale, 1 inch=1 mile.
15. The story of the geologic making of southern Illinois: Illinois State Geol. Survey, Educ. Ser. no. 1, 41 pp., 11 figs., 1927.

Weller, Stuart—Continued.

16. Geology of the Cave in Rock quadrangle: Kentucky Geol. Survey, Ser. 6, vol. 26, pp. 1-128, 9 figs. (incl. map), 1927.
17. (and Sutton, A. H., and Crider, A. F.). Map of the areal and structural geology (fault pattern) of Caldwell County, Kentucky: Kentucky Geol. Survey, Ser. 6, 1927. Scale 1 inch=1 mile.
18. Paleontology and human relations: Geol. Soc. America, Bull., vol. 38, no. 1, pp. 275-285, March 30, 1927; Smithsonian Inst., Ann. Rept., 1927, pp. 309-319, 1928.
19. (and St. Clair, Stuart). Geology of Ste. Genevieve County, Missouri: Missouri Bur. Geology and Mines, second ser., vol. 22, 352 pp., 5 figs., 25 pls., 2 maps, 1928. (Description of Quaternary deposits by E. W. Shaw, pp. 251-255.)

Wells, Edgar Herbert.

1. Manganese in New Mexico: New Mexico State School of Mines, Bull. no. 2, Mineral Resources Survey, 85 pp., map, 1918.
2. Oil and gas possibilities of the Puertecito district, Socorro and Valencia counties, New Mexico: New Mexico State School of Mines, Bull. no. 3, Mineral Resources Survey, 47 pp., map, Socorro, N. M., 1919.
3. The geology of the El Vado dam site and reservoir, Rio Arriba County, New Mexico: New Mexico, State Eng., 8th Bienn. Rept., pp. 239-251 [1928].

Wells, Roger Clark. See also Hess, 6; Merwin, 6; Mills, 1.

1. Sodium salts in 1917: U. S. Geol. Survey, Mineral Resources, 1917, pt. 2, pp. 305-341, January 27, 1919.
2. Sodium and sodium compounds in 1918: U. S. Geol. Survey, Mineral Resources, 1918, pt. 2, pp. 159-198, October 24, 1919.
3. Sodium compounds in 1919: U. S. Geol. Survey, Mineral Resources, 1919, pt. 2, pp. 47-76, 1920.
4. An unusual deposit of aragonite from sea water: Washington Acad. Sci. Jour., vol. 10, no. 9, pp. 249-254, May 4, 1920.
5. Some effects produced by common changes in natural waters: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, pp. 630-634, 1921.
6. Chemical and physical researches on sedimentation (abstract): Geol. Soc. America, Bull., vol. 32, no. 1, pp. 23-24, March 31, 1921.
7. Sodium compounds in 1920: U. S. Geol. Survey, Mineral Resources, 1920, pt. 2, pp. 123-134, September 30, 1921.
8. Sodium sulphate; its sources and uses: U. S. Geol. Survey, Bull. 717, 43 pp., 13 figs., 1923.
9. Chemical suggestions concerning the origin of Lake Superior copper ores (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 100, March 30, 1923.
10. Reaction between ferrous and cuprous salts: Am. Jour. Sci., 5th ser., vol. 8, pp. 428-433, November, 1924.
11. Chemistry of deposition of native copper from ascending solutions: U. S. Geol. Survey, Bull. 778, 71 pp., 2 figs., 1925.
12. Observations on the minor constituents of petroleum: Econ. Geology, vol. 20, no. 3, pp. 286-288, May, 1925.

Wentworth, Chester Keeler. See also Clarke, J. M., 21; Hobbs, 16.

1. A laboratory and field study of cobble abrasion: Jour. Geology, vol. 27, no. 7, pp. 507-521, 28 figs., October-November, 1919.

Wentworth, Chester Keeler—Continued.

2. Field study of the shapes of river pebbles (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 89-90, March 31, 1921.
3. Russell Fork fault of southwest Virginia: *Jour. Geology*, vol. 29, no. 4, pp. 351-369, 8 figs., May-June, 1921.
4. Pebbles and history: *The Iowa Alumnus*, vol. 19, no. 3, pp. 86-87, December, 1921.
5. A note on the wedge work of pebbles: *Am. Jour. Sci.*, 5th ser., vol. 2, pp. 313-318, 3 figs., December, 1921.
6. The geology and coal resources of Russell County, Virginia: *Virginia Geol. Survey, Bull.* no. 22, 179 pp., 16 figs., 28 pls., 1922.
7. Adapting a short-bellows roll-film Kodak for detail work in the field: *Jour. Geology*, vol. 30, no. 2, pp. 158-161, 2 figs., February-March, 1922.
8. A method of measuring and plotting the shapes of pebbles: *U. S. Geol. Survey, Bull.* 730, 91-114, 17 figs., 2 pls., June 26, 1922. Abstract *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 89, March 31, 1921.
9. A scale of grade and class terms for clastic sediments: *Jour. Geology*, vol. 30, no. 5, pp. 377-392, 3 figs., July-August, 1922.
10. The shapes of beach pebbles: *U. S. Geol. Survey, Prof. Paper* 131, pp. 75-83, 8 figs., 2 pls., December 20, 1922.
11. Late Tertiary and Pleistocene terrace plains of the middle Atlantic Coastal Plain (abstract): *Geol. Soc. America, Bull.*, vol. 34, no. 1, p. 91, March 30, 1923.
12. An improved recording micrometer for rock analysis: *Jour. Geology*, vol. 31, no. 3, pp. 228-232, 2 figs., April-May, 1923.
13. The fossil swamp deposit at the Walker Hotel site, Connecticut Avenue and De Sales Street. Washington, D. C.; formations exposed in the excavation: *Washington Acad. Sci., Jour.*, vol. 14, no. 1, pp. 1-11, 7 figs., January 4, 1924.
14. Note on a cobble of peculiar shape: *Jour. Geology*, vol. 32, no. 6, pp. 524-528, 2 figs., August-September, 1924.
15. The geology of Lanai [Hawaiian Islands]: *Bernice P. Bishop Mus., Bull.* 24, 72 pp., 13 figs., 7 pls., 1925.
16. Photographic practice for field geologists: *Iowa, Univ., Studies*, new ser., no. 89, *Studies in Natural History*, vol. 11, no. 4, pp. 17-41, 5 pls., March 15, 1925.
17. The desert strip of west Molokai [Hawaiian Islands]: *Iowa, Univ., Studies*, new ser., no. 89, *Studies in Natural History*, vol. 11, no. 4, pp. 41-56, 4 figs., 3 pls., March 15, 1925.
18. A tropical peat bog [Washington Island, North Pacific] (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 137, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 1, p. 78, February, 1925.
19. Tuff craters of Oahu (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 151-152, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, p. 150, March, 1925.
20. Chink-faceting; a new process of pebble-shaping: *Jour. Geology*, vol. 33, no. 3, pp. 260-267, 5 figs., April-May, 1925.
21. Eustatic bench of islands of the north Pacific: *Geol. Soc. America, Bull.*, vol. 36, no. 3, pp. 521-544, 14 figs., September 30, 1925; abstract (by Chester K. Wentworth and H. S. Palmer), no. 1, pp. 136-137, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 1, pp. 77-78, February, 1925.

Wentworth, Chester Keeler—Continued.

22. Pyroclastic geology of Oahu (with the collaboration of A. A. Pegau in petrology): Bernice P. Bishop Mus., Bull. 30, 121 pp., 28 figs., 22 pls., 1926.
23. Physical features of the Hawaiian Islands (abstract): Iowa Acad. Sci., Proc., 1925, vol. 32, pp. 359-360 [1926].
24. Sedimentary processes on volcanic islands (abstract): Iowa Acad. Sci., Proc., 1925, vol. 32, pp. 360-361 [1926].
25. Graphic computation of volumes of contoured solids: Am. Jour. Sci., 5th ser., vol. 11, pp. 305-311, 3 figs., April, 1926.
26. Principles of erosion in Hawaii (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 171-172, March 30, 1926; Pan-Am. Geologist, vol. 45, no. 2, p. 167, March, 1926.
27. Methods of mechanical analysis of sediments: Iowa, Univ., Studies in Natural History, vol. 11, no. 11, 52 pp., 9 figs., October 15, 1926.
28. The geology and coal resources of the Middlesboro Basin in Kentucky: Kentucky Geol. Survey, Ser. 6, vol. 29, pp. 155-235, 30 figs., 1 pl., 1927.
29. Estimates of marine and fluvial erosion in Hawaii: Jour. Geology, vol. 35, no. 2, pp. 117-133, February-March, 1927.
30. (and Apfel, Earl T.). The composition of geological publication in the biennium 1921-1922: Science, new ser., vol. 65, pp. 231-232, March 4, 1927.
31. Striated boulders on the southern coastal plain of Virginia (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, pp. 150-151, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 2, p. 153, March, 1927.
32. The accuracy of mechanical analysis: Am. Jour. Sci., 5th ser., vol. 13, pp. 399-408, 5 figs., May, 1927.
33. (and Hoffmeister, J. El., and Ladd, H. S.). Unusual types of sediments from Pacific Islands (abstract): Washington Acad. Sci., Jour., vol. 17, no. 10, pp. 275-276, May 19, 1927.
34. Underground photography—a depth of focus chart: Econ. Geology, vol. 23, no. 1, pp. 100-105, 2 figs., January, 1928.
35. Examination of dam sites in the Tennessee River basin (abstract): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 204-205, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 156, March, 1928.
36. Striated cobbles in southern States (abstract with discussion by Charles W. Brown): Geol. Soc. America, Bull., vol. 39, no. 1, pp. 218-219, March 30, 1928; Pan-Am. Geologist, vol. 49, no. 2, p. 148, March, 1928.
37. Principles of stream erosion in Hawaii: Jour. Geology, vol. 36, no. 5, pp. 385-410, 20 figs., July-August, 1928.
38. (and Ohrenschall, Robert D., and Wolford, John J.). Summary of geologic reports on dam sites [of Tennessee River]: U. S., 70th Cong., 1st sess., H. R. Doc. no. 185, pp. 197-210, 1928.
39. The geology of the Cove Creek reservoir [Tennessee]: U. S., 70th Cong., 1st sess., H. R. Doc. no. 185, pp. 210-232, 1928.
40. Studies of coarse sediments, 1923-1927: Nat. Research Council, Reprint and Circ. Ser., no. 85, pp. 23-35, 1928.
41. Striated cobbles in Southern States: Geol. Soc. America, Bull., vol. 39, no. 4, pp. 941-953, 1 fig., 3 pls., December 30, 1928.

Westcott, Henry Palmer.

1. Handbook of natural gas. 3d ed., 725 pp., 255 figs., Erie, Pennsylvania, Metric Metal Works, 1920.

Westgate, Lewis Gardner. See also Foye, 5.

1. Deposits of iron ore near Stanford, Montana: U. S. Geol. Survey, Bull. 715, pp. 85-92, 4 figs. (incl. maps), September 16, 1920.
2. Deposits of iron ore near Stanford, Montana (U. S. Geol. Survey, Bull. 715, 1920) (abstract by J. D. Sears): Washington Acad. Sci., Jour., vol. 11, no. 16, p. 393, October 4, 1921.
3. Ore deposits of the Salmon River district, Portland Canal region, Alaska: U. S. Geol. Survey., Bull. 722, pp. 117-140, 3 figs., 1921.
4. Deposits of chromite in eastern Oregon: U. S. Geol. Survey, Bull. 725, pp. 37-60, 11 figs., August 3, 1921.
5. Deposits of chromite in Stillwater and Sweet Grass counties, Montana: U. S. Geol. Survey, Bull. 725, pp. 67-84, 5 figs., August 3, 1921.
6. Geology of Delaware County: Ohio, Geol. Survey, 4th ser., Bull. 30, 147 pp., 28 figs., 12 pls., 2 maps, 1926.
7. (and Knopf, Adolph). Geology of Pioche, Nevada, and vicinity: Am. Inst. Min. and Met. Eng., Trans., vol. 75, pp. 816-836, 4 figs., 1927; [preprint], no. 1647, 21 pp., 4 figs., March, 1927; abstract, Mining and Metallurgy, vol. 8, no. 243, p. 150, March, 1927.

Weston-Dunn, J. A.

1. Some relations between metal content, lode filling, and country rock: Econ. Geology, vol. 18, no. 5, pp. 443-473, 1 fig., August, 1923.

Wetmore, Alexander.

1. Five new species of birds from cave deposits in Porto Rico: Biol. Soc. Washington, Proc., vol. 33, pp. 77-81, 2 pls., December 30, 1920.
2. A fossil owl from the Bridger Eocene: Acad. Nat. Sci. Philadelphia, Proc., vol. 73, pt. 3, pp. 455-458, 2 figs., 1922.
3. Bird remains from the caves of Porto Rico: Am. Mus. Nat. Hist., Bull., vol. 46, pp. 297-333, 25 figs., 1922.
4. Avian fossils from the Miocene and Pliocene of Nebraska: Am. Mus. Nat. Hist., Bull., vol. 48, pp. 483-507, 20 figs., 1923.
5. Fossil birds from southeastern Arizona: U. S. Nat. Mus., Proc., vol. 64, art. 5, 18 pp., 9 figs., 1924.
6. The systematic position of *Palaeospiza bella* Allen, with observations on other fossil birds: Harvard College, Mus. Comp. Zoology, Bull., vol. 67, no. 2, pp. 183-193, 4 figs., 4 pls., May, 1925.
7. Descriptions of additional fossil birds from the Miocene of Nebraska: Am. Mus. Novitates, no. 211, 5 pp., 6 figs., March 11, 1926.
8. Fossil birds from the Green River deposits of eastern Utah: Carnegie Mus., Annals, vol. 16, nos. 3-4, pp. 391-399, 2 pls., April, 1926.
9. Description of a fossil hawk from the Miocene of Nebraska: Carnegie Mus., Annals, vol. 16, nos. 3-4, pp. 403-406, 1 pl., April, 1926.
10. The fossil birds of North America: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 26, no. 5, pp. 525-526, September-October, 1926.
11. An additional record for the fossil hawk, *Urubitinga enecta* [Sioux County, Nebraska]: Am. Mus. Novitates, no. 241, 3 pp., 3 figs., December 31, 1926.
12. Fossil birds from the Oligocene of Colorado: Colorado Mus. Nat. Hist., Proc., vol. 7, no. 2, 11 pp., 23 figs., July 15, 1927.

Wetmore, Alexander—Continued.

13. Additional specimens of fossil birds from the upper Tertiary deposits of Nebraska: *Am. Mus. Novitates*, no. 302, 5 pp., 2 figs., February 29, 1928.
14. Prehistoric ornithology in North America: *Washington Acad. Sci., Jour.*, vol. 18, no. 6, pp. 145-158, March 19, 1928.
15. The systematic position of the fossil bird *Cyphornis magnus*: Canada, Geol. Survey, Bull. no. 49, pp. 1-4, 1928.

Weymouth, A. Allen. See also Goodspeed, 2.

1. Simple methods for making thin sections: *Econ. Geology*, vol. 23, no. 3, pp. 323-330, May, 1928.
2. The occurrence of tridymite and cristobalite in a granite xenolith: *Am. Jour. Sci.*, 5th ser., vol. 16, pp. 237-238, September, 1928.

Wheeler, Arthur O.

1. Notes on the glaciers of the main and Selkirk ranges of the Canadian Rocky Mountains: *Canadian Alpine Jour.*, vol. 11, pp. 121-146, 7 pls., 1920.
2. Motion of the Yoho Glacier, 1917, 1918, and 1919: *Canadian Alpine Jour.*, vol. 11, pp. 182-185, 1 pl., 1920.
3. Motion of the Robson Glacier [British Columbia]: *Canadian Alpine Jour.*, vol. 13, pp. 158-159, 1923.

Wheeler, E. P., II.

1. Olivine from Monhegan Island, Maine: *Am. Mineralogist*, vol. 12, no. 6, pp. 259-261, June, 1927.
2. Stellerite from near Juneau, Alaska: *Am. Mineralogist*, vol. 12, no. 10, pp. 360-364, October, 1927.

Wheeler, H. C.

1. (and Clifton, R. L.). Age and correlation of Garber sands [Garber oil field, Oklahoma]: *Oil and Gas Jour.*, vol. 24, no. 27, pp. 34, 92, 101, 104, 3 figs., November 26, 1925.

Wheeler, Harold Leslie.

1. Bibliography of the occurrence, geology, and mining of manganese with some references on its metallurgy and uses: *Econ. Geology*, vol. 14, no. 3, pp. 245-261, May, 1919.

Wheeler, Herbert Allen.

1. North Texas oil fields: *Eng. and Min. Jour.*, vol. 109, pp. 741-747, 2 figs., March 27, 1920.
2. The North Texas oil fields: *Eng. and Min. Jour.*, vol. 109, pp. 1317-1319, June 12, 1920.
3. Rapid formation of lead ore: *Mining and Metallurgy*, no. 158, sec. 1, p. 35, 1 fig. (abstract), sec. 25, 4 pp., 1 fig., February, 1920; (with discussion by Frank L. Nason, James F. Kemp, H. V. Winchell, W. Lindgren, S. H. Ball, Alan M. Bateman, and E. S. Moore), *Am. Inst. Min. and Met. Eng., Trans.*, vol. 63, pp. 311-323, 1 fig., 1920.
4. The influence of faulting in the Illinois oil fields: *Eng. and Min. Jour.*, vol. 111, no. 1, pp. 22-24, January 1, 1921.
5. The new Wamac oil pool [Marion County] in Illinois: *Eng. and Min. Jour.*, vol. 113, no. 5, pp. 213-214, February 4, 1922.
6. Some facts about Teapot dome [Wyoming]: *Eng. and Min. Jour.-Press*, vol. 117, no. 12, pp. 480-482, 1 fig., March 22, 1924.
7. The oil resurrection of Colorado: *Eng. and Min. Jour.-Press*, vol. 119, no. 2, pp. 51-54, January 10, 1925.

Wheeler, Richard Vernon. See Tideswell, 1.

Wheeler, Walter Calhoun. See Clarke, F. W., 2.

Wherry, Edgar Theodore. See also Davy, 1; Foshag, 14; Larsen, 16; Lee, O. I., 1; Merrill, 18; Shannon, 37; Stose, 21.

1. (and Adams, Elliot Q.). The classification of mimetic crystals: Washington Acad. Sci., Jour., vol. 9, no. 6, pp. 153–157, March 19, 1919.
2. Chalcopyrite crystals from the Bergen archways [New Jersey]: Am. Mineralogist, vol. 4, no. 9, pp. 116–118, 2 figs., September, 1919.
3. Monazite from Boothwyn, Pennsylvania: Am. Mineralogist, vol. 4, no. 10, pp. 123–124, 1 pl., October, 1919.
4. Phenol red indicator as an aid to the geologist (abstract): Geol. Soc. American, Bull., vol. 31, no. 1, p. 161, March 31, 1920.
5. Illustration of the isometric system; pyrite from Falls of French Creek, Pennsylvania: Am. Mineralogist, vol. 5, no. 6, pp. 116–117, June, 1920.
6. Lists of the isometric minerals included in Goldschmidt's Winkeltabellen: Am. Mineralogist, vol. 5, no. 6, pp. 117–119, June, 1920.
7. Lists of the tetragonal minerals included in Goldschmidt's Winkeltabellen: Am. Mineralogist, vol. 5, no. 7, pp. 132–133, July, 1920.
8. Lists of the hexagonal and trigonal minerals included in Goldschmidt's Winkeltabellen: Am. Mineralogist, vol. 5, no. 8, pp. 150–152, August, 1920.
9. Lists of the orthorhombic minerals included in Goldschmidt's Winkeltabellen: Am. Mineralogist, vol. 5, no. 9, pp. 164–166, September, 1920.
10. Lists of the monoclinic minerals included in Goldschmidt's Winkeltabellen: Am. Mineralogist, vol. 5, no. 10, pp. 181–182, October, 1920.
11. The nomenclature and classification of sulphide minerals: Washington Acad. Sci., Jour., vol. 10, no. 17, pp. 487–496, October 19, 1920.
12. List of triclinic minerals included in Goldschmidt's Winkeltabellen: Am. Mineralogist, vol. 5, no. 12, p. 208, December, 1920.
13. (and Foshag, W. F.). A new classification of the sulpho-salt minerals: Washington Acad. Sci., Jour., vol. 11, no. 1, pp. 1–8, January 4, 1921.
14. New mineral species described during 1916–1920: Am. Mineralogist, vol. 6, no. 1, pp. 12–17, January, 1921.
15. The Florence Pilkington Manchester memorial collection [of minerals at Fall River, Massachusetts]: Am. Mineralogist, vol. 6, no. 3, p. 53, 1 pl., March, 1921.
16. New minerals: Am. Mineralogist, vol. 6, no. 3, pp. 63–68, March, 1921; no. 5, pp. 92–95, May, 1921; no. 6, p. 105, June, 1921; no. 7, pp. 118–119, July, 1921; no. 9, p. 140, September, 1921; no. 11, pp. 165–166, November, 1921.
17. Review of the optical-crystallographic properties of calcium oxalate monohydrate [whewellite]: Washington Acad. Sci., Jour., vol. 12, no. 8, pp. 196–200, 1 fig., April 19, 1922.
18. (and Shannon, E. V.). Crocidolite from eastern Pennsylvania: Washington Acad. Sci., Jour., vol. 12, no. 10, pp. 242–244, May 19, 1922.
19. The plagioclase feldspars as a case of atomic isomorphism: Am. Mineralogist, vol. 7, no. 7, pp. 113–121, July, 1922.
20. Volume isomorphism in the silicates: Am. Mineralogist, vol. 8, no. 1, pp. 1–8, January, 1923.

Wherry, Edgar Theodore—Continued.

21. Note on the composition of thomsonite: *Am. Mineralogist*, vol. 8, no. 7, pp. 121-125, 1 fig., July, 1923.
22. Classified list of minerals described or discredited during 1921: *Am. Mineralogist*, vol. 9, no. 2, p. 34, February, 1924.
23. At the surface of a crystal: *Am. Mineralogist*, vol. 9, no. 3, pp. 45-54, 12 figs., March, 1924.
24. Surface of a crystal: *Pan-Am. Geologist*, vol. 41, no. 4, pp. 241-250, 1 fig., 1 pl., May, 1924.
25. Further notes on atomic volume isomorphism: *Am. Mineralogist*, vol. 9, no. 8, pp. 165-169, August, 1924.
26. Radio-detector minerals: *Am. Mineralogist*, vol. 10, no. 2, pp. 28-31, February, 1925.
27. Bentonite as a one-dimensional colloid: *Am. Mineralogist*, vol. 10, no. 5, pp. 120-123, May, 1925.
28. A tabulation of the aluminium silicate minerals: *Am. Mineralogist*, vol. 10, no. 6, pp. 140-145, 1 fig., June, 1925.
29. Pseudo-isomorphism as illustrated in thomsonite: *Am. Mineralogist*, vol. 10, no. 10, pp. 342-347, October, 1925.
30. A visit to the locality of newtonite [Newton County, Arkansas]: *Am. Mineralogist*, vol. 10, no. 10, pp. 350-351, October, 1925.
31. Names for the symmetry classes based on axes: *Am. Mineralogist*, vol. 12, no. 5, pp. 218-224, May, 1927.
32. The status of keeleyite: *Am. Mineralogist*, vol. 13, no. 1, pp. 29-30, January, 1928.
33. Arrangement of the symmetry classes: *Am. Mineralogist*, vol. 13, no. 5, pp. 198-199, May, 1928.

Whitbeck, Ray Hughes.

1. The geography and economic development of southeastern Wisconsin: *Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 58*, 252 pp., 93 figs., 1921.

White, Charles Henry.

1. The need of quantitative methods in applied geology: *Min. and Sci. Press*, vol. 122, pp. 601-605, April 30, 1921.
2. Desert varnish: *Am. Jour. Sci.*, 5th ser., vol. 7, pp. 413-420, May, 1924.
3. Supergene enrichment of copper below a lean pyritic zone [at Cananea, Mexico]: *Econ. Geology*, vol. 19, no. 8, pp. 724-729, December, 1924.

White, (Charles) David. See also Hackford, 1; Hobbs, 16; Johnson, R. H., 2; Longwell, 4; Science Service, 6; Semmes, 3; Stadnichenko, T., 1, 2; Willis, B., 4; Winchester, 1.

1. Genetic problems affecting search for new oil regions: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 65, pp. 176-198, 1921; *Mining and Metallurgy*, no. 158, sec. 1, p. 32 (abstract), sec. 21, 20 pp., February, 1920; abstract, *Eng. and Min. Jour.*, vol. 109, pp. 512-514, February 21, 1920; discussion by R. H. Johnson, H. W. Hixon, David Reger, and J. F. Duce, *Am. Inst. Min. and Met. Eng., Trans.* [preprint], no. 994, pp. 9-12, 1920.
2. The petroleum resources of the world: *Am. Acad. Political and Social Science, Annals*, vol. 89, no. 178, pp. 111-134, pls. (maps), May, 1920.
3. The unmined supply of petroleum in the United States. In Redwood, Boverton, *Petroleum*, 4th ed., vol. 1, pp. 92-96, 1 fig., London, 1922.

White, (Charles) David—Continued.

4. [Oil shales of the United States]: Am. Mining Cong., 23rd Ann. Convention, Rept. of Proc., pp. 151–153, 1921.
5. Federal cooperation: Am. Mining Cong., 23d Ann. Convention, Rept. of Proc., pp. 456–470, 1921.
6. Our future oil supply: Eng. and Min. Jour., vol. 111, no. 21, pp. 951–955, June 4, 1921.
7. Potash reserves in west Texas: Mining and Metallurgy, no. 184, pp. 19–25, 2 figs., April, 1922.
8. Oil reserves of the United States: Am. Inst. Min. and Met. Eng., Trans., vol. 68, pp. 953–958, 1923; [preprint] no. 1165, 6 pp., June, 1922; abstract, Mining and Metallurgy, no. 186, pp. 37–38, June, 1922.
9. The oil supply of the world: Mechanical Engineering, vol. 44, no. 9, pp. 567–569, September, 1922. Abstract, Eng. and Min. Jour., vol. 113, no. 11, pp. 455–456, March 18, 1922.
10. Problems in oil geology and their advancement through cooperative research: Am. Assoc. Petroleum Geologists, Bull., vol. 6, no. 6, pp. 509–515, November–December, 1922.
11. (and Stadnichenko, T.). Some mother plants of petroleum in the Devonian black shales: Econ. Geology, vol. 18, no. 3, pp. 238–252, 5 pls., April–May, 1923.
12. Radioactivity and oil-field location: Am. Assoc. Petroleum Geologists, Bull., vol. 7, no. 3, pp. 290–291, May–June, 1923.
13. Some needed peat investigations: Am. Peat Soc., Jour., vol. 17, no. 2, pp. 45–56, April, 1924.
14. Gravity observations from the standpoint of the local geology: Geol. Soc. America, Bull., vol. 35, no. 2, pp. 207–277, 1 pl., June 30, 1924.
15. Researches in geology of finding and recovery of oil: Nat. Petroleum News, vol. 16, no. 43, pp. 85, 87, October 22, 1924.
16. Proposed oceanographic research by the navy: Jour. Geology, vol. 32, no. 8, pp. 690–695, November–December, 1924.
17. Permian of western America from the paleobotanical standpoint: Pan-Pacific Sci. Cong., Australia, 1923, Proc., vol. 2, pp. 1050–1077 [1924].
18. Researches in geology of finding oil: Oil and Gas Jour., vol. 23, no. 20–A, pp. 64–A, 196–H, October 9, 1924.
19. (and Stadnichenko, T.). Some mother plants of petroleum in the Devonian black shales: Kentucky Geol. Survey, Ser. 6, vol. 21, pp. 99–117, 5 pls., 1925.
20. Quelques relations entre les charbons de différentes espèces et la composition des dépôts sédimentaires originels: Soc. géol. Belgique, Livre jubilaire, 1874–1924, t. 1, pp. 365–378, 1 pl., 1925.
21. Public geology and national mineral wealth: International Geol. Cong., 13th Sess., Belgium, 1922, fasc. 3, pp. 1711–1718, 1925.
22. Plant fossils [indications of ancient climate] (abstract): Science, new ser., vol. 61, p. xii, January 9, 1925.
23. Environmental conditions of deposition of coal: Am. Inst. Min. and Met. Eng., trans. [preprint], no. 1402, 21 pp., January, 1925; (with discussion), Trans., vol. 71, pp. 3–34, 1925; abstract, Mining and Metallurgy, vol. 6, no. 222, p. 298, June, 1925.
24. Progressive regional carbonization of coals: Am. Inst. Min. and Met. Eng., Eng., Trans. [preprint], no. 1414, 27 pp., February, 1925; (with discussion), Trans., vol. 71, pp. 253–281, 3 figs., 1925; abstract, Mining and Metallurgy, vol. 6, no. 222, pp. 300–301, June, 1925.

White, (Charles) David—Continued.

25. Projected oceanographic investigations (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, p. 147, March 30, 1925; *Pan-Am. Geologist*, vol. 43, no. 2, pp. 146-147, March, 1925.
26. Upper Paleozoic climate as indicated by fossil plants: *Sci. Monthly*, vol. 20, no. 5, pp. 465-473, May, 1925.
27. Coal: *Sci. Monthly*, vol. 21, no. 2, pp. 177-181, August, 1925.
28. Late Paleozoic climates as indicated by fossil plants (abstract): *Pan-Am. Geologist*, vol. 44, no. 1, p. 73, August, 1925.
29. General features of the Mississippian floras of the Appalachian trough: *West Virginia Geol. Survey*, Mercer, Monroe, and Summers counties, pp. 837-843, 1926.
30. Geologic factors affecting and possibly controlling Pleistocene ice sheet development in North America (abstract): *Washington Acad. Sci., Jour.*, vol. 16, no. 3, pp. 69-72, February 4, 1926.
31. Some cold waves of geologic history: *Sci. Monthly*, vol. 22, no. 4, pp. 359-363, April, 1926.
32. Memorial of Frank Hall Knowlton: *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 52-70, portr., March 30, 1927.
33. The flora of the Hermit shale in the Grand Canyon, Arizona: *Nat. Acad. Sci., Proc.*, vol. 13, no. 8, pp. 574-575, August, 1927.
34. Study of the fossil floras in the Grand Canyon, Arizona: *Carnegie Inst. Washington, Year Book* no. 26, pp. 366-369, December, 1927.
35. Discussion of floating continents. In *Theory of continental drift*, pp. 187-188, *Am. Assoc. Petroleum Geologists*, 1928.
36. Some factors in rock metamorphism: *Nat. Acad. Sci., Proc.* vol. 14, no. 1, pp. 5-7, January, 1928.
37. A spiral graph of geologic time: *Washington Acad. Sci., Jour.*, vol. 18, no. 8, pp. 201-203, 1 fig., April 19, 1928.
38. The promotion of knowledge of pre-Cambrian life: *Science*, new ser., vol. 67, pp. 620-621, June 22, 1928.
39. Algal deposits of Unkar Proterozoic age in the Grand Canyon, Arizona: *Nat. Acad. Sci., Proc.*, vol. 14, no. 7, pp. 597-600, July, 1928.
40. Encouragement of pre-Cambrian paleontology: *Jour. Geology*, vol. 36, no. 8, pp. 743-744, November-December, 1928.
41. Study of the fossil floras in the Grand Canyon, Arizona: *Carnegie Inst. Washington, Year Book* no. 27, 1927-28, pp. 389-390, December, 1928.

White, George W.

1. The limestone caves and caverns of Ohio: *Ohio Jour. Sci.*, vol. 26, no. 2, pp. 73-116, 16 figs., March, 1926.

White, Israel Charles, 1848-1927. See also Aurin, 2; Barton, 2; Galloway, J. J., 4; Lee, W. T., 13; Miller, B. L., 9; Moyer, 1.

1. West Virginia's second deepest well of the world, the I. H. Lake No. 1, No. 4304 of the Hope Natural Gas Company's West Virginia series: *Ohio Gas and Oil Men's Jour.*, vol. 1, no. 2, pp. 17-22, Septmeber, 1919.
2. Some results of deep drilling in the Appalachian oil and gas fields (abstract with discussion by A. C. Lane): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 157, March 31, 1920.
3. Geographic distribution of sulphur in West Virginia coal beds: *Am. Inst. Min. and Met. Eng., Bull.* no. 153, pp. 2197-2206, 8 figs., September, 1919; *Trans.*, vol. 63, pp. 932-944, 8 figs., 1920. Discussion, *Mining and Metallurgy*, no. 157, pp. 51-53, January, 1920.

White, Israel Charles—Continued.

4. Important epochs in the history of petroleum and natural gas: *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 171-186, March 31, 1921.
5. Map of West Virginia showing coal, oil, gas, iron ore, and limestone areas. Scale, 8 miles to 1 inch. *West Virginia Geological Survey*, 1921.
6. The natural resources of West Virginia: The South's Development, *Manufacturers Record*, vol. 86, no. 24, pt. 2, pp. 432-434, December 11, 1924.
7. Memorial of John James Stevenson: *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 100-115, portr., March 30, 1925.
8. Greatest coal field in the world [West Virginia]: *Pan-Am. Geologist*, vol. 44, no. 1, pp. 65-67, August, 1925.
9. (and Ashley, G. H., and Bownocker, J. A.). The Pittsburgh coal bed (with discussion): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 74, pp. 481-506, 7 figs. (incl. maps), 1926.
10. World's greatest oil discovery: *Pan-Am. Geologist*, vol. 49, no. 1, pp. 47-52, February, 1928.

White, James.

1. Coal resources of western Canada: *Coal Age*, vol. 15, pp. 744-748, 858-862, 4 figs., 1919.

White, Luther H.

1. (and Greene, F. C.). Correlation of the "Wilcox" sand in the Okmulgee district with the Osage, Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 3, pp. 399-407, 2 pls., May-June, 1921.
2. Oklahoma's deep horizons correlated [pre-Chattanooga formations]: *Oil and Gas Jour.*, vol. 24, no. 45, pp. 60, 110, 112, 114, 116, map (opp. p. 17), April 1, 1926.
3. Oil and gas in Oklahoma; subsurface distribution and correlation of the pre-Chattanooga ("Wilcox" sand) series of northeastern Oklahoma: *Oklahoma Geol. Survey, Bull.* no. 40-B, 23 pp., 2 pls. (incl. map), June, 1926; *Bull.* no. 40, vol. 1, pp. 21-40, 2 pls. (incl. map), July, 1929.

White, Maynard Pressley.

1. Some index Foraminifera of the Tampico Embayment area of Mexico: *Jour. Paleontology*, vol. 2, no. 3, pp. 177-215, no. 4, pp. 280-316, 6 figs., 4 pls., September and December, 1928.

White, W. P. See also Atwood, W. W., 4; Wyckoff, 5.

1. Quartz inversion in chalcedony (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, p. 112, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, pp. 155-156, March, 1924.

White, Walter N. See also Deeds, 1, 2.

1. Recent work on the discharge method of estimating ground water supplies (abstract): *Washington Acad. Sci., Jour.*, vol. 17, no. 9, pp. 238-240, May 4, 1927.

Whitehead, Walter Lucius.

1. The veins of Cobalt, Ontario: *Econ. Geology*, vol. 15, no. 2, pp. 103-135, 2 pls., 5 figs., March, 1920.

Whitehurst, John W. See Ponton, 1.

Whitlock, Herbert Percy.

1. René Just Haüy and his influence: New York State Mus. Bull., nos. 207, 208, pp. 149-155, 1 pl. (portr.), 1919.
2. Crystallographic studies of barite: New York State Mus. Bull., nos. 207, 208, pp. 157-164, 7 figs., 1919.
3. Pyrite crystals from Broadway and 207th Street, New York City: Am. Mineralogist, vol. 4, no. 4, pp. 31-32, 1 pl., April, 1919.
4. Pyrite crystals from Bald Mountain, Colorado: Am. Mineralogist, vol. 4, no. 6, pp. 67-68, 2 figs., June, 1919.
5. The Mineralogical Society of America: Science, new ser., vol. 51, pp. 219-220, February 27, 1920.
6. Wood turned to opal: Natural History, vol. 20, no. 1, p. 82, January-February, 1920.
7. A model for demonstrating crystal structure: Am. Jour. Sci., 4th ser., vol. 49, pp. 259-264, 13 figs., April, 1920.
8. Alfred J. Moses, 1859-1920: Science, new ser., vol. 51, pp. 429-430, April 30, 1920.
9. Obituary, Alfred J. Moses, 1859-1920: Am. Jour. Sci., 4th ser., vol. 49, p. 389, May, 1920.
10. The Morgenthau collection [of minerals in New York City]: Am. Mineralogist, vol. 6, no. 1, pp. 1-2, 1 pl., January, 1921.
11. Proceedings of the first annual meeting of the Mineralogical Society of America, held at Chicago, Illinois, December 29, 1920: Geol. Soc. America, Bull., vol. 32, no. 1, pp. 163-170, March 31, 1921.
12. Proceedings of the second annual meeting of the Mineralogical Society of America, held at Amherst, Massachusetts, December 29, 1921: Geol. Soc. America, Bull., vol. 33, no. 1, pp. 227-230, March 21, 1922.
13. The Morgan memorial hall of minerals and gems: Natural History (Jour. Am. Mus. Nat. Hist.), vol. 22, no. 5, pp. 447-451, 4 pls., September-October, 1922.
14. A list of new crystal forms of minerals: Am. Mus. Nat. Hist., Bull. vol. 46, pp. 89-278, 1922.
15. Crystallographic studies of pyrite: Am. Mus. Novitates, no. 112, 8 pp., 7 figs., May 28, 1924.
16. The story of the minerals: Am. Mus. Nat. Hist., Handbook series no. 12, 144 pp., illus., New York, 1925.
17. Memorial of Edmund Otis Hovey: Am. Mineralogist, vol. 10, no. 3, pp. 58-60, portr., March, 1925.
18. The mimicry of minerals: Natural History (Am. Mus. Nat. Hist., Jour.), vol. 25, no. 2, pp. 156-161, 8 figs., March-April, 1925.
19. Crystallographic studies of apatite: Am. Mus. Novitates, no. 190, 4 pp., 1 fig., October 7, 1925.
20. Mineralogy and petrography: Am. Year Book, 1927, pp. 599-600, 1928.

Whitman, Alfred Russell.

1. Diffusion in vein genesis at Cobalt [Ontario]: Econ. Geology, vol. 15, no. 2, pp. 136-149, March, 1920.
2. The veins of Cobalt, Ontario (discussion) [glacial conditions in Ontario]: Econ. Geology, vol. 16, no. 8, pp. 558-561, December, 1921.
3. Genesis of the ores of the Cobalt district, Ontario, Canada: California, Univ., Pub., Dept. Geol. Sciences, Bull., vol. 13, no. 7, pp. 253-310, 3 figs., 2 pls., May 31, 1922.

Whitman, Alfred Russell—Continued.

4. A synthetic porphyry at Porcupine [Ontario]: *Jour. Geology*, vol. 35, no. 5, pp. 404-420, 10 figs., July-August, 1927.
5. Diffusion in ore genesis: *Econ. Geology*, vol. 23, no. 5, pp. 473-488, 5 figs., August, 1928.

Whitney, Francis Luther.

1. Bibliography and index of North American Mesozoic Invertebrata: *Bull. Am. Paleontology*, vol. 12, no. 48, 448 pp., June 29, 1928.

Whitney, Milton, 1860-1927.

1. The depletion of soils by chemical denudation: *Science*, new ser., vol. 56, pp. 216-218, August 25, 1922.

Whitney, Ray H.

1. [Geology of the Mexia oil field, Texas]: *Oil and Gas. Jour.*, vol. 20, no. 42, pp. 92-93, 96-97, 100-101, March 17, 1922.

Whitson, Andrew Robeson.

1. (and others). Soil survey of Dane County, Wisconsin: *Wisconsin Geol. Nat. Hist. Survey, Bull. no. 53-A* (soil ser. no. 20), 86 pp., map, 1917.
2. (and others). Soil survey of Buffalo County, Wisconsin: *Wisconsin Geol. Nat. Hist. Survey, Bull. no. 54-A* (soil ser. no. 23), 76 pp., map, 1917.
3. (and others). Reconnaissance soil survey of south part of north central Wisconsin: *Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 52-A* (soil ser. no. 16), 108 pp., map, 4 pls., 3 figs., 1918.
4. (and others). Soil survey of Wood County, Wisconsin: *Wisconsin Geol. Nat. Hist. Survey, Bull. no. 52-B* (soil ser. no. 17), 86 pp., map, 1918.
5. (and others). Soil survey of Portage County, Wisconsin: *Wisconsin Geol. Nat. Hist. Survey, Bull. no. 52-C* (soil ser. no. 18), 79 pp., map, 1918.
6. (and others). Soil survey of Door County, Wisconsin: *Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 52-D* (soil ser. no. 19), 72 pp., 3 figs., map, 1919.
7. (and others). Soil survey of Milwaukee County, Wisconsin: *Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 56-A* (soil ser. no. 28), 63 pp., 3 figs., map, 1919.
8. (and others). Soil survey of Waupaca County, Wisconsin: *Wisconsin Geol. Nat. Hist. Survey, Bull. no. 54-C* (soil ser. no. 25), 84 pp., map, 1921.
9. (and others). Soil survey of Outagamie County, Wisconsin: *Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 54-D* (soil ser. no. 26), 78 pp., 2 figs., 2 pls., map, 1921.
10. (and others). Soil survey of northern Wisconsin: *Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 55* (soil ser. no. 27), 46 pp., 6 figs., map, 1921.
11. (and others). Soil survey of Rock County, Wisconsin: *Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 53-B*, 80 pp., 5 pls., map, 1922.
12. (and others). Soil survey of Jackson County, Wisconsin: *Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 54-B* (soil ser. no. 24), 85 pp., 2 figs. 5 pls., map, 1923.

Whitson, Andrew Robeson—Continued.

13. (and others). Soil survey of Adams County, Wisconsin: Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 41-D (soil ser. no. 42), 83 pp., 3 figs., 6 pls., map, 1924.
14. Soils of Wisconsin: Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 68, 270 pp., 20 figs., 32 pls., map, 1927.

Whittaker, Edward J., 1891-1924.

1. The fossil molluscan faunas of the marl deposits of the Ottawa district: Canada, Geol. Survey, Bull. no. 33, pp. 59-77, 4 pls., September 14, 1921.
2. Mackenzie River district between Great Slave Lake and Simpson: Canada, Geol. Survey, Summ. Rept., 1921, pt. B, pp. 45-57, 2 pls., map, 1922.
3. Pleistocene and recent fossils of the St. Lawrence Valley from Prescott to Beauharnois: Report on structural materials along the St. Lawrence River (Keele and Cole), pp. 103-108, Canada, Mines Branch, 1922.
4. Bottom deposits of McKay Lake, Ottawa [Ontario]: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 16, sec. 4, pp. 141-157, 1 fig., 2 pls., 1922.
5. Mackenzie River district between Providence and Simpson, Northwest Territories: Canada, Geol. Survey, Summ. Rept., 1922, pt. B, pp. 88-100, 2 figs., 2 pls., 1923.

Whittemore, C. R.

1. Geology and metallurgical treatment of the Sullivan zinc ore [Trail, East Kootenay district, British Columbia]: Canadian Inst. Min. and Met., Monthly Bull., no. 136, pp. 509-545, August, 1923; Trans., vol. 26, pp. 441-477 [1924].

Whittemore, J. W.

1. The clays of Louisiana; Shreveport area: Louisiana, Dept. Conservation, Bull. 14, 84 pp., illus., May, 1927.
2. Clays and clay development of Louisiana: Am. Ceramic Soc., Jour., vol. 11, no. 10, pp. 782-784, October, 1928.

Whittlesey, Derwent S. See Jones, W. D., 1.

Whitwell, George E.

1. (and Patty, E. N.). The magnesite deposits of Washington; their occurrence and technology: Washington Geol. Survey, Bull. no. 25, 194 pp., 5 figs., 13 pls., 1921.

Whorton, Chester.

1. (and Clark, J. M.). Mineola dome of northeast Missouri (abstract): Pan-Am. Geologist, vol. 45, no. 3, p. 250, April, 1926.

Wichman, F. M.

1. The Ophir mining district, Utah: Eng. and Min. Jour., vol. 110, no. 12, pp. 560-563, 3 figs., September 18, 1920.

Wickham, Henry Frederick.

1. Fossil beetles from Vero, Florida: Am. Jour. Sci., 4th ser., vol. 47, pp. 355-357, May, 1919. Florida State Geol. Survey, Twelfth Ann. Rept., pp. 5-7, 1919.

Wiedey, Lionel William.

1. Notes on the Vaqueros and Temblor formations of the California Miocene with descriptions of new species: San Diego Soc. Nat. Hist., vol. 5, no. 10, pp. 95-182, 13 pls., March 31, 1928.
2. Revision of Turritellas of Vaqueros and Temblor Miocene of California (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 318-319, May, 1928.

Wieland, George Reber. See also Hylander, 1.

1. Classification of the Cycadophyta: Am. Jour. Sci., 4th ser., vol. 47, pp. 392-406, 3 figs., June, 1919.
2. [Paleobotanical studies]: Carnegie Inst. Washington, Year Book no. 17, 1918, pp. 312-314, February, 1919; no. 18, 1919, pp. 362-363, March, 1920.
3. Distribution and relationship of the cycadeoids: Am. Jour. Botany, vol. 7, no. 4, pp. 125-145, 5 figs., 1 pl., April, 1920.
4. The *Tetracentron-Drimys* question: Am. Jour. Sci., 4th ser., vol. 49, pp. 382-383, May, 1920.
5. The long-necked sauropod *Barosaurus*: Science, new ser., vol. 51, pp. 528-530, May 28, 1920.
6. Recedent lake shores of the Cretaceous: Science, new ser., vol. 52 pp. 537-538, December 3, 1920.
7. [Report on investigations of Cycadeoidea]: Carnegie Inst. Washington, Year Book no. 19, pp. 404-405, January, 1921.
8. Monocarpy and pseudomonocarpy in the cycadeoids: Am. Jour. Botany, vol. 8, no. 4, pp. 218-230, 1 fig., 4 pls., April, 1921.
9. Paleobotany as viewed by two geologists: Science, new ser., vol. 53, pp. 437-439, May 6, 1921.
10. Two new North American cycadeoids: Canada, Geol. Survey, Bull. no. 33, pp. 79-85, 1 fig., 2 pls., September 14, 1921.
11. [Progress of cycadophyte investigation]: Carnegie Inst. Washington, Year Book no. 20, pp. 452-457, February, 1922.
12. Devonian plants: Science, new ser., vol. 55, pp. 427-428, April 21, 1922.
13. [Report on investigations of cycadeoids]: Carnegie Inst. Washington, Year Book no. 21, pp. 396-397, January, 1923.
14. Fossil plants as evidence for resistance to environment. In Organic adaptation to environment, pp. 149-185, 3 pls., New Haven, Yale University Press, 1924.
15. Progress in study of cycadeoids: Carnegie Inst. Washington, Year Book no. 22, pp. 353-354, 1924.
16. Recent achievements in paleobotany: Science, new ser., vol. 60, pp. 233-235, September 12, 1924.
17. [Studies on fossil cycads]: Carnegie Inst. Washington, Year Book no. 23, pp. 296-298, December, 1924.
18. Dinosaur feed: Science, new ser., vol. 61, pp. 601-603, June 12, 1925.
19. Triaso-Jurassic plant evolution and climate: Am. Naturalist, vol. 59, pp. 452-474, September-October, 1925; abstract, Pan-Am. Geologist, vol. 44, no. 1, p. 80, August, 1925.
20. Dinosaur extinction: Am. Naturalist, vol. 59, pp. 557-565, November-December, 1925.
21. [Report on investigations of cycadeoids]: Carnegie Inst. Washington, Year Book no. 24, pp. 360-362, December, 1925.
22. The El Consuelo cycadeoids [southern Oaxaca, Mexico]: Bot. Gazette, vol. 81, no. 1, pp. 72-86, 1 fig., March, 1926.

Wieland, George Reber—Continued.

23. [Research on cycadeoids]: Carnegie Inst. Washington, Year Book no. 25, pp. 407-408, December, 1926.
24. [Cycadeoid investigations]: Carnegie Inst. Washington, Year book no. 26, pp. 370-372, December, 1927.
25. Certain fossil plants erroneously referred to cycadeoids: Bot. Gazette, vol. 86, no. 1, pp. 32-49, 14 figs., September, 1928.
26. [Report of investigations on the cycadeoids]: Carnegie Inst. Washington, Year Book no. 27, pp. 390-391, December, 1928.

Wilcox, Walter D.

1. Dr. Charles D. Walcott: Canadian Alpine Jour., vol. 16, pp. 231-234, portr., 1928.

Wilder, Frank Alonzo.

1. Some conclusions in regard to the origin of gypsum: Geol. Soc. America, Bull., vol. 32, no. 4, pp. 385-394, December 1, 1921; (abstract, with discussion by J. V. Lewis), vol. 32, no. 1, p. 67, March 31, 1921.
2. Gypsum; its occurrence, origin, technology, and uses, with special chapters devoted to gypsum in Iowa: Iowa Geol. Survey, vol. 28, pp. 47-537 [1923].
3. Gypsum and the gypsum industry: Min. Congress Jour., vol. 12, no. 3, pp. 156, 173, March, 1926.
4. Gypsum and anhydrite: Am. Mineralogist, vol. 13, no. 9, pp. 476-480, 3 figs., September, 1928.

Wilhelm, Victor H. See also Case, J. B., 3.

1. The geology of the Portland Canal district [British Columbia]: Min. and Sci. Press, vol. 122, pp. 95-96, 1 fig., January 15, 1921.
2. Baja California and oil possibilities: Min. and Sci. Press, vol. 123, no. 4, pp. 125-127, 1 fig., July 23, 1921.
3. (and Saunders, L. W.). Report on the Mt. Poso oil field: California State Min. Bur., Summary of Operations California Oil Fields, vol. 12, no. 7, pp. 5-12, 2 pls., January, 1927.
4. The possibility of deeper production in the Coalinga field, California: Oil Bull., vol. 13, no. 7, pp. 695-699, 3 figs., July, 1927.

Wilkerson, Albert S.

1. Possible sources of some boulders in the glacial drift of Missouri: Science, new ser., vol. 65, p. 404, April 22, 1927.

Wilkes, W. N.

1. Minerals of Arkansas: Arkansas, Bur. Mines, Manufactures, and Agriculture, 127 pp., illus., 1925.

Wilkins, T. Russell.

1. Actino-uranium and enlarged ancient halos (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 124, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, pp. 72-73, February, 1927.

Willard, Bradford. See also Miller, B. L., 9.

1. Mud cracks forming over water [Badlands, South Dakota]: Jour. Geology, vol. 33, no. 3, pp. 286-287, 1 fig., April-May, 1925.
2. A six-rayed *Devonaster eucharis* (Hall): Jour. Geology, vol. 34, no. 1, pp. 85-87, 1 fig., January-February, 1926.
3. The age and origin of the Shawangunk formation: Jour. Paleontology, vol. 1, no. 4, pp. 255-258, 1 pl., January, 1928.

Willard, Bradford—Continued.

4. Teaching vertebrate paleontology: *Jour. Geology*, vol. 36, no. 3, pp. 261–264, 2 figs., April–May, 1928.
5. The brachiopods of the Ottosee and Holston formations of Tennessee and Virginia: *Harvard Coll., Mus. Comp. Zool., Bull.*, vol. 68, no. 6, pp. 255–292, 3 pls., May, 1928.

Willard, Daniel Everett.

1. The story of the North Star State [Minnesota]. 395 pp., 156 figs., St. Paul, Minn., Webb Publishing Company, 1922.
2. The story of the prairies, or the landscape geology of North Dakota. Tenth edition, revised, 375 pp., 170 figs., Saint Paul, Minn., Webb Publishing Company, 1923.

Wiley, Arthur.

1. Origin of land vertebrates (abstract): *Pan-Am. Geologist*, vol. 43, no. 3, pp. 233–234, April, 1925.

Williams, A. E. See Kentucky Geol. Survey, 15, 27.

Williams, Charles Francis.

1. The Mayo district in Yukon Territory: *Eng. and Min. Jour.-Press*, vol. 113, no. 24, pp. 1039–1046, 11 figs., June 17, 1922.
2. Ore deposition in the Tri-State district: *Eng. and Min. Jour.-Press*, vol. 121, no. 22, p. 893, May 29, 1926.

Williams, D. W.

1. Correlation of producing sands in southeastern Kansas and northeastern Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 2, pp. 293–297, 2 figs., March–April, 1921.
2. Oil and gas in Marion, Chase, Dickinson, Morris, and Geary counties, Kansas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 4, pp. 507–511, July–August, 1921.

Williams, Edward Higginson, jr.

1. The deep Kansan pondings in Pennsylvania and the deposits therein: *Am. Philos. Soc., Proc.*, vol. 59, no. 1, pp. 49–84, 15 figs., 1920.

Williams, Frank E. See Martin, L., 2.

Williams, George O.

1. Radium-bearing silts of southeastern Utah: *Eng. and Min. Jour.*, vol. 119, no. 5, pp. 201–202, January 31, 1925.

Williams, Guy Yandell. See Shead, 8.

Williams, Henry Shaler, 1847–1918.

1. Upper Paleozoic faunas of Missouri: *Pan-Am. Geologist*, vol. 37, no. 1, pp. 35–40, February, 1922.

Williams, Howel.

1. A recent volcanic eruption near Lassen Peak, California: *California, Univ., Dept. Geol. Sci., Bull.*, vol. 17, no. 7, pp. 241–263, 10 figs., May 19, 1928.
2. Geology of Marysville Buttes, California (abstract): *Pan-Am. Geologist*, vol. 49, no. 4, p. 312, May, 1928.

Williams, Ira Abraham.

1. The Oregon caves; remarkable "marble halls" of Josephine County: *Natural History*, vol. 20, no. 4, pp. 397–405, 10 figs., September–October, 1920.

Williams, Ira Abraham—Continued.

2. Underground waters in arid valleys of Oregon: *Pan-Am. Geologist*, vol. 39, no. 1, pp. 76-77, February, 1923.
3. The lava river tunnel [Deschutes County, Oregon]: *Natural History*, vol. 23, no. 2, pp. 162-171, 7 figs., March-April, 1923.

Williams, James S. See also Boone County Hist. Soc.; Branson, 4.

1. Louisiana limestone of northeastern Missouri (abstract): *Pan-Am. Geologist*, vol. 45, no. 3, p. 252, April, 1926.

Williams, Merton Yarwood. See also Hume, 28.

1. The Silurian geology and faunas of Ontario Peninsula and Manitoulin and adjacent islands: *Canada, Geol. Survey, Mem.* 111, 195 pp., 34 pls., 6 figs., 2 maps, 1919.
2. Oil fields of southwestern Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1918, pt. E, pp. 30-41, 2 figs., map, 1919.
3. The geology of Ontario as it affects gas and oil production: *Canadian Min. Jour.*, vol. 40, p. 655, September 3, 1919.
4. The oil fields of Elgin, Essex, and the southern part of Kent counties, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1919, pt. E, pp. 7-16, 1920.
5. Oil occurrence in a syncline in the Trenton formation of Kent County: *Canada, Geol. Survey, Summ. Rept.*, 1919, pt. E, pp. 16-18, 3 pls., 1920.
6. Paleozoic rocks of Mattagami and Abitibi rivers, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1919, pt. G, pp. 1-12, 2 figs., 1920.
7. Paleozoic geology of the Mattagami and Abitibi rivers: *Ontario Bur. Mines, 29th Ann. Rept.* vol. 29, pt. 2, pp. 19-30, 1 fig., 1920.
8. Paleozoic sections south of James Bay (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 138-139, March 31, 1920.
9. Future prospects for oil and gas production in Ontario: *Canadian Min. Inst., Monthly Bull.*, no. 96, pp. 320-325, April, 1920; *Canadian Min. Inst., Trans.*, vol. 23, pp. 341-347 [1921].
10. Paleozoic stratigraphy of Pagwachuan, lower Kenogami and lower Albany rivers: *Canada, Geol. Survey, Summ. Rept.*, 1920, pt. D, pp. 18-25, 1 fig., 1921.
11. Oil possibilities of Manitoulin Island: *Canada, Geol. Survey, Summ. Rept.*, 1920, pt. D, pp. 26-32, 2 figs., 1921.
12. Stratigraphy of the Moose and Albany rivers of northern Ontario (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, p. 39, March 31, 1921.
13. Exploration east of Mackenzie River between Simpson and Wrigley: *Canada, Geol. Survey, Summ. Rept.*, 1921, pt. B, pp. 56-66, map, 1922.
14. Reconnaissance across northeastern British Columbia and the geology of the northern extension of Franklin Mountains, Northwest Territories: *Canada, Geol. Survey, Summ. Rept.*, 1922, pt. B, pp. 65-87, 1923.
15. Oil prospects in southern Alberta: *Canadian Min. Jour.*, vol. 44, no. 48, pp. 949-950, November 30, 1923.
16. Franklin Mountains [Mackenzie]: *Geol. Soc. America, Bull.*, vol. 35, no. 3, pp. 449-464, 3 figs., September 30, 1924; abstract, with discussion by Alfred H. Brooks, no. 1, pp. 96-98, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, pp. 147-148, March, 1924.

Williams, Merton Yarwood—Continued.

17. Sandstone dikes in southeastern Alberta (petrography of the dikes, by T. C. Phemister, pp. 157–162): Roy. Soc. Canada, Trans., 3d ser., vol. 21, sec. 4, pp. 153–174, 4 pls., May, 1927; abstract, p. xciv, 1927.
18. Memorial of William Lawrence Uglow: Am. Mineralogist, vol. 12, no. 5, pp. 191–197, 1 fig. (portr.), May, 1927.

Williams, T. B.

1. Identification of coals: Econ. Geology, vol. 21, no. 4, pp. 364–374, 7 figs., June–July, 1926.

Williamson, E. D. See also Adams, L. H., 7.

1. Earthquakes and the elastic properties of the earth (abstract): Washington Acad. Sci., Jour., vol. 10, no. 17, p. 498, October 19, 1920.
2. (and Adams, L. H.). Density distribution in the earth: Washington Acad. Sci., Jour., vol. 13, no. 19, pp. 413–431, 5 figs., November 19, 1923.

Willis, Bailey. See also Am. Geophysical Union, 1; Bowie, 24; Day, 13; Gillson, 11; Hobbs, 7.

1. Structure of the Pacific ranges, California (abstract, with discussion by R. T. Chamberlin, A. Keith, G. R. Mansfield, and G. W. Stose): Geol. Soc. America, Bull., vol. 30, pp. 84–86, March 31, 1919.
2. Discoidal structure of the lithosphere: Nat. Acad. Sci., Proc., vol. 5, no. 9, pp. 377–383, September 15, 1919.
3. Joseph Barrell and his work: Jour. Geology, vol. 27, no. 8 pp. 664–672, November–December, 1919.
4. Geologic distillation of petroleum: Mining and Metallurgy, no. 157, sec. 1, p. 49 (abstract), sec. 10, 7 pp., January, 1920; Am. Inst. Min and Met. Eng., Trans. [preprint], no. 1088, pp. 18–20, August, 1921. Oil and Gas Jour., vol. 18, no. 43, pp. 54–55, March 26, 1920. Discussion by David Reger, David White, H. W. Hixon, and E. W. Shaw [Am. Inst. Min. and Met. Eng., Trans. preprint no. 994, pp. 12–19, 1920].
5. Structure of the coast ranges of California (abstract with discussion): Geol. Soc. America, Bull., vol. 31, no. 1, p. 193, March 31, 1920.
6. Discoidal structure of the lithosphere: Geol. Soc. America, Bull., vol. 31, no. 2, pp. 247–302, 6 pls., 2 figs., June 30, 1920.
7. Aerial observation of earthquake rifts: Seismol. Soc. America, Bull., vol. 11, no. 2, pp. 136–139, June, 1921; Science, new ser., vol. 54, pp. 266–268, September 23, 1921.
8. Rôle of isostatic stress: Geol. Soc. America, Bull., vol. 33, no. 2, pp. 371–374, June 30, 1922.
9. Geology of the Colorado River basin with reference to engineering problems: Science, new ser., vol. 56, pp. 177–182, August 18, 1922.
10. (and Wood, H. O.). Fault map of the State of California compiled from data assembled by the Seismological Society of America . . . Compilation of faults by Bailey Willis and H. O. Wood. Scale 1:506,880. 1922.
11. Geologic structures. 295 pp., 121 figs., 10 pls., New York, McGraw-Hill Book Company, 1923.
12. Earthquakes: Science, new ser., vol. 57, pp. xii, xiv, January 19, 1923.
13. A fault map of California: Seismol. Soc. America, Bull., vol. 13, no. 1, pp. 1–12, map, March, 1923.
14. Dynamics of faulting and folding (abstract): Geol. Soc. America, Bull., vol. 34, no. 1, p. 58, March 30, 1923.

Willis, Bailey—Continued.

15. Fault map of California; Faults of the Coast Ranges of California (abstract with discussion by G. H. Ashley and the author): *Geol. Soc. America, Bull.*, vol. 34, no. 1, pp. 58-59, March 30, 1923.
16. Memorial tribute to Raphael Pumpelly: *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 42-43, March 30, 1924.
17. (and Wood, H. O.). A fault map of California: *Science, new ser.*, vol. 59, pp. 310-311, April 4, 1924.
18. Earthquake risk in California: *Seismol. Soc. America, Bull.*, vol. 13, no. 3, pp. 89-99, 5 figs., September, 1923; no. 4, pp. 147-154, 1 fig., 1 pl., December, 1923; vol. 14, no. 1, pp. 9-25, 1 fig., 4 pls., March, 1924; no. 2, pp. 150-164, 2 figs., June, 1924; no. 4, pp. 256-264, December, 1924.
19. Memorial of Raphael Pumpelly: *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 45-84, portr., March 30, 1925.
20. Rocky Mountain structure: *Jour. Geology*, vol. 33, no. 3, pp. 272-277, 1 fig., April-May, 1925.
21. The Santa Barbara earthquake: *Science, new ser.*, vol. 62, p. x, July 10, 1925.
22. A study of the Santa Barbara earthquake of June 29, 1925: *Seismological Soc. America, Bull.*, vol. 15, no. 4, pp. 255-278, 1 fig., 2 pls., December, 1925.
23. Essays on earthquakes: *Seismological Soc. America, Bull.*, vol. 16, no. 1, pp. 27-40, March, 1926.
24. The Californian orogenic period (abstract): *Science, new ser.*, vol. 63, p. 484, May 7, 1926.
25. The work of the Seismological Society of America (abstract): *Seismological Soc. America, Bull.*, vol. 16, no. 2, pp. 150-153, June, 1926.
26. Some geological features of the Washington magnesite deposits (discussion): *Eng. and Min. Jour.*, vol. 124, no. 22, p. 858, November, 1926.
27. Folding or shearing, which? (with discussion by E. Russell Lloyd and W. A. J. M. van Waterschoot van der Gracht): *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 1, pp. 31-47, January, 1927.
28. Normal faulting on upthrust arches (abstract): *Geol. Soc. America, Bull.*, vol. 38, no. 1, pp. 203-204, March 30, 1927.
29. Report on comparative seismology: *Carnegie Inst. Washington, Year Book* no. 26, pp. 390-392, December, 1927.
30. La force sismique en Californie: *Soc. géol. Belgique, Livre jubilaire, 1874-1924*, t. 1, pp. 407-460, 9 figs., 7 pls. [n. d., 1928?].
31. Continental drift. In *Theory of continental drift*, pp. 76-82, *Am. Assoc. Petroleum Geologists*, 1928.
32. Prof. T. C. Chamberlin: *Nature*, vol. 122, pp. 930-931, December 15, 1928.
33. Geotectonics of the Pacific: *Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc.*, vol. 1, pp. 358-369, 1928.
34. Seismicity of Chile and California: *Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc.*, vol. 1, pp. 389-394, 1928.

Willis, C. G. See Ferguson, R. N., 2.

Willis, Robin. See also Gould, 27; Louderback, 6.

1. Topography of active faulting in California (abstract): *Geol. Soc. America, Bull.*, vol. 36, no. 1, pp. 143-144, March 30, 1925.

Willis, Robin—Continued.

2. Physiography of the California Coast Ranges: Geol. Soc. America, Bull., vol. 36, no. 4, pp. 641-678, 23 figs., December, 1925; abstract, no. 1, p. 143, March 30, 1925; Pan-Am. Geologist, vol. 43, no. 2, p. 146, March, 1925.

Williston, Samuel H. See Tough, 1.

Williston, Samuel Wendell, 1852-1918.

1. The osteology of the reptile; arranged and edited by William King Gregory. 300 pp., 191 figs., Cambridge, Harvard University Press, 1925.

Willson, Fred F.

1. The Montana earthquake of June 27, 1925; damage in Gallatin County: Seismological Soc. America, Bull., vol. 16, no. 3, pp. 165-169, 6 pls., September, 1926.

Willson, K. M. See Crawford, R. D., 1.

Willmarth, Mary Grace.

1. Geologic time classification of United States Geological Survey compared with other classifications: U. S. Geol. Survey, Bull. 769, plate I, 1924 [issued separately].
2. The geologic time classification of the United States Geological Survey compared with other classifications, accompanied by the original definitions of era, period, and epoch terms: U. S. Geol. Survey, Bull. 769, 138 pp., 1925.

Wilmore, A. N.

1. Barbados, a key to the physical history of the West Indies and Caribbean regions: Geographical Teacher, London, no. 69, vol. 12, pt. 5, pp. 357-363, summer, 1924.

Wilson, Alfred William Gunning.

1. Coalmont amber [British Columbia]: Canada, Mines Branch, Summ. Rept., 1921, pp. 1-2, 1923.
2. Precious metals in Canada: In Handbook of Canada, pp. 397-407, 1 fig., Toronto, 1924; Canadian Min. Jour., vol. 45, nos. 20 and 21, pp. 471-474, 495-498, 7 figs., May 16 and 23, 1924.

Wilson, Alice E.

1. The range of certain lower Ordovician faunas of the Ottawa Valley, with descriptions of some new species: Canada, Geol. Survey, Bull. no. 33, pp. 19-57, 7 figs., 3 pls., September 14, 1921.
2. Ordovician fossils from St. Lawrence Canal system localities, Ontario and Quebec: Report on structural materials along the St. Lawrence River (Keele and Cole), pp. 109-111, Canada, Mines Branch, 1922.
3. A new genus and a new species of gastropod from the upper Ordovician of British Columbia: Canadian Field-Naturalist, vol. 38, no. 8, pp. 150-151, 2 fig., 2 pls., October, 1924.
4. An upper Ordovician fauna from the Rocky Mountains, British Columbia: Canada, Geol. Survey, Bull. no. 44, pp. 1-34, 2 figs., 8 pls., 1926. Review by Edwin Kirk, Jour. Geology, vol. 35, no. 3, pp. 287-288, April-May, 1927.

Wilson, Benjamin H.

1. Deductions from the occurrence and character of two large quartzose conglomerate boulders of unknown origin found in the Kansas drift sheet at Centerville, Iowa: Iowa Acad. Sci., Proc. 1922, vol. 29, pp. 121-126, 2 figs., [1924?].
2. An excellent example of high clay bank erosion in Lee County, Iowa: Iowa Acad. Sci., Proc., vol. 30, pp. 425-431, 5 figs. [1924.]
3. Physiographic evolution of Lake Cooper (abstract): Pan-Am. Geologist, vol. 46, no. 5, p. 403, December, 1926.
4. Notes on the progress of the physiographic evolution of Lake Cooper (abstract): Iowa Acad. Sci., Proc., 1926, vol. 33, p. 221 [1927].

Wilson, Eldred Dewey. See also Jenkins, 2, 3; Lausen, 1.

1. Proterozoic Mazatzal quartzite of central Arizona: Pan-Am. Geologist, vol. 38, no. 4, pp. 299-312, 3 pls., November, 1922.
2. Geology and ore deposits of the Courtland-Gleeson region, Arizona: Arizona: Arizona Bur. Mines, Bull. no. 123 (geol. ser. no. 5), 79 pp., 17 figs., 3 pls. (incl. map), June 1, 1927.
3. Arizona gold placers (second edition, revised): Arizona Bur. Mines, Bull. no. 124, 60 pp., 12 figs. (incl. maps), August 15, 1927.
4. Asbestos deposits of Arizona; with an introduction on asbestos minerals by G. M. Butler: Arizona Bur. Mines, Bull. no. 126, 100 pp., 7 figs., 8 pls., October 15, 1928.

Wilson, Ernest H.

1. Barite from Great Notch, New Jersey: Am. Mineralogist, vol. 4, no. 1, p. 4, January, 1919.

Wilson, Ford E. See Thiessen, 9.

Wilson, Hewitt.

1. (and Bennett, A. Lee, and Heath, Fred T.). Preliminary report on the residual kaolin and feldspar in the Pacific Northwest: Am. Ceramic Soc., Jour., vol. 6, no. 3, pp. 475-490, 9 figs., March, 1923.
2. The clays and shales of Washington; their technology and uses: Washington, Univ., Bull., Eng. Exper. Sta. ser., Bull. no. 18, 224 pp., October, 1923.

Wilson, John Howard.

1. An occurrence of carnotite near Denver: Eng. and Min. Jour.-Press, vol. 116, no. 6, pp. 239-240, 1 fig., August 11, 1923.
2. Microscopic subsurface work in the Rocky Mountain region: Mining and Metallurgy, vol. 5, no. 216, p. 582, December, 1924.
3. Lithologic character of shale as an index of metamorphism: Am. Assoc. Petroleum Geologists, Bull., vol. 10, no. 6, pp. 625-633, June, 1926.

Wilson, Malcolm Earl.

1. The occurrence of oil and gas in Missouri: Missouri Bur. Geology and Mines, 2d ser., vol. 16, 284 pp., 11 pls. (incl. maps), 1922.

Wilson, Morley Evans.

1. Geology and mineral deposits of a part of Amherst township, Quebec: Canada, Geol. Survey, Mem. 113, 54 pp., 7 pls., 3 figs., map, 1919.
2. (and MacKay, B. R.) Landslide adjacent to Rivière Blanche, St. Thuribe, Parish of St. Casimir, Portneuf County, Province of Quebec: Quebec (Province), Rept. on Mining Operations, 1918, pp. 152-156, 2 pls., 1919.

Wilson, Morley Evans—Continued.

3. Mineral deposits in the Ottawa Valley: Canada, Geol. Survey, Summ. Rept., 1919, pt. E., pp. 19-44, 10 figs., 3 maps, 1920.
4. Molybdenite in the lower Ottawa Valley: Canadian Inst. Min. and Met., Monthly Bull., no. 102, pp. 749-754, 3 figs., October, 1920; Canadian Min. Inst., Trans., vol. 23, pp. 419-425, 3 figs. [1921].
5. Madoc district, Ontario: Canada, Geol. Survey, Summ. Rept., 1920, pt. D, pp. 39-40, 1921.
6. The fluorspar deposits of Madoc district, Ontario: Canada, Geol. Survey, Summ. Rept., 1920, pt. D, pp. 41-78, 9 figs., 1921. Canadian Min. Jour., vol. 42, no. 45, pp. 887-892, November 11, 1921.
7. The relationships of the Paleozoic to the pre-Cambrian along the southern border of the Laurentian highlands in southeastern Ontario and the adjacent portions of Quebec: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 14, sec. 4, pp. 15-24, 1 fig., 1921.
8. Talc in Canada: Canadian Min. Jour., vol. 43, no. 23, p. 356, June 9, 1922.
9. The fluorspar deposits of the Madoc district, Ontario (abstract): Science, new ser., vol. 56, p. 176, August 11, 1922.
10. Arnprior-Quyon and Maniwaki areas, Ontario and Quebec: Canada, Geol. Survey, Mem. 136, 152 pp., 17 pls., 4 maps, 1924.
11. A discovery of copper-bearing minerals in Petite Nation seigniory, Papineau County, Quebec: Canada, Geol. Survey, Summ. Rept. 1923, pt. C1, pp. 74-75, 1924.
12. Ontario's lead mine [Kingdon lead mine, Galetta, Ontario]: Canadian Min. Jour., vol. 45, nos. 20 and 21, pp. 477-478, 501-502, May 16 and 23, 1924.
13. Grenville pre-Cambrian subprovince (abstract): Pan-Am. Geologist, vol. 42, no. 1, pp. 79-80, August, 1924.
14. A discovery of copper-bearing minerals in Petite Nation Seigniory, Papineau County, Quebec: Quebec, Dept. Colonization . . . , Report on Mining Operations . . . 1924, pp. 39-42, 1925.
15. The Grenville pre-Cambrian subprovince: Jour. Geology, vol. 33, no. 4, pp. 389-407, 3 figs., May-June, 1925; abstract, British Assoc. Adv. Sci., Rept. 92d Meeting, pp. 388-389, 1925.
16. Talc deposits of Canada: Canada, Geol. Survey, Econ. Geology ser., no. 2, 149 pp., 19 figs., 14 pls., 1926.
17. Mineral deposits in Nova Scotia and New Brunswick: Canada, Geol. Survey, Summ. Rept., 1926, pt. C, pp. 77-99, 8 figs., 1927.
18. Some problems of classification in the Canadian pre-Cambrian shield: Geol. Mag., vol. 64, pp. 1-7, January, 1927.
19. Hastings series (abstract): Geol. Soc. America, Bull., vol. 38, no. 1, p. 118, March 30, 1927; Pan-Am. Geologist, vol. 47, no. 1, p. 69, February, 1927.

Wilson, Philip D.

1. Notes on certain ore deposits of the Southwest (discussion): Am. Inst. Min. Eng., Bull. no. 146, pp. 445-447, February, 1919.
2. The British Columbia batholith and related ore deposits: Am. Inst. Min. and Met. Eng., Trans., vol. 68, pp. 536-551, 1 fig., 1923; [pre-print] no. 1183, 16 pp., 1 fig., August, 1922; abstract, Mining and Metallurgy, no. 188, pp. 34-37, 1 fig., August, 1922.
3. Deposition of copper carbonate from mine water: Am. Inst. Min. and Met. Eng., Trans., vol. 68, pp. 552-555, 1923; abstract, Mining and Metallurgy, no. 188, p. 37, August, 1922.

Wilson, Philip D.—Continued.

4. Methods of mine sampling, recording underground geological data and estimation of ore reserves (committee report): *Am. Min. Congress, 27th Ann. Convention, Rept. of Proc.*, pp. 332-351, 1925; *Arizona Min. Jour.*, vol. 8, no. 11, pp. 11-13, 25-26, November 1, 1924.

Wilson, Roy Arthur. See also Ward, 9.

1. The possibilities of oil in South Dakota; a preliminary discussion: *South Dakota Geol. and Nat. Hist. Survey, Bull. 10* (South Dakota, Univ., Bull., ser. 22, no. 3), 97 pp., 18 figs., map, March, 1922.
2. The possibilities of oil in northern Dewey County: *South Dakota Geol. and Nat. Hist. Survey, Circular 10*, 9 pp., 3 figs., December, 1922.
3. (and Ward, Freeman). The possibilities of oil in northern Ziebach County: *South Dakota Geol. and Nat. Hist. Survey, Circular 13*, 11 pp., 4 figs., April, 1923.
4. The bearing of geologic features in South Dakota upon oil possibilities: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 7, no. 5, pp. 507-516. 1 fig., September-October, 1923.
5. (and Lambert, J. S., and Clapp, C. H.). Belt series in Montana (abstract, with discussion by Edward Sampson): *Geol. Soc. America, Bull.*, vol. 35, no. 1, pp. 91-92, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, pp. 145-146, March, 1924.
6. Oil and gas possibilities in northeastern Meade County: *South Dakota Geol. and Nat. Hist. Survey, Circular 23*, 14 pp., 3 figs., April, 1925.
7. The Ragged Butte structure [in southwestern Dewey County, South Dakota]: *South Dakota Geol. and Nat. Hist. Survey, Circular 24*, 7 pp., 2 figs., 1 pl., April, 1925.
8. The upper Paleozoic rocks of Oklahoma; paleogeography: *Oklahoma Geol. Survey, Bull. no. 41*, pp. 22-66, 30 figs., January, 1927.
9. The Pennsylvanian of Oklahoma and its problems. *Oklahoma Acad. Sci., Proc.*, vol. 6, pt. 2, 1926 (*Oklahoma, Univ., Bull., new ser.*, no. 348), p. 251, January 1, 1927.
10. Problems of stratigraphy in Oklahoma (abstract): *Oklahoma Acad. Sci., Proc.*, vol. 6, pt. 2, 1926 (*Oklahoma, Univ., Bull., new ser.*, no. 348), pp. 252-253, January 1, 1927.

Wilson, Roy M.

1. Summary of the July, 1927, eruption of Kilauea: *Hawaiian Volcano Observatory, Monthly Bull.*, vol. 15, no. 7, pp. 52-54, July, 1927.

Wilson, W. B.

1. Geology of Glenn pool of Oklahoma: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 11, no. 10, pp. 1055-1065, 5 figs., October, 1927.

Wilson, William James, 1851-1920.

1. Notes on some fossil plants from New Brunswick: *Canada Geol. Survey, Summ. Rept.*, 1917, pt. F, pp. 15-17, 1918.

Wiman, Carl.

1. Some reptiles from the Niobrara group in Kansas: *Upsala, Univ., Geol. Inst., Bull.*, vol. 18, pp. 9-18, 9 figs., 3 pls., 1920.

Winchell, Alexander Newton. See also Winchell, N. H., 2.

1. (and Miller, E. R.). Further notes on the dust fall of March 9, 1918: *Am. Jour. Sci.*, 4th ser., vol. 47, pp. 133-134, February, 1919.

Winchell, Alexander Newton—Continued.

2. (and others). Handbook of mining in the Lake Superior region. Prepared for the Lake Superior meeting of the American Institute of Mining and Metallurgical Engineers, held in August, 1920. 260 pp., illus. (incl. maps) [Minneapolis, 1920].
3. The origin of graphite: *Econ. Geology*, vol. 16, no. 7, pp. 492–500, November, 1921.
4. (and Miller, E. R.). The great dust fall of March 19, 1920: *Am. Jour. Sci.*, 5th ser., vol. 3, pp. 349–364, May, 1922.
5. Studies in the pyroxene group: *Am. Jour. Sci.*, 5th ser., vol. 6, pp. 504–520, 7 figs., December, 1923.
6. Studies in the amphibole group: *Am. Jour. Sci.*, 5th ser., vol. 7, pp. 287–310, 4 figs., April, 1924.
7. The properties of scapolite: *Am. Mineralogist*, vol. 9, no. 5, pp. 108–112, 1 fig., May, 1924.
8. Petrographic studies of limestone alterations at Bingham [Utah] (with discussion): *Am. Inst. Min. and Met. Eng., Trans.*, vol. 70, pp. 884–903, 9 figs., 1924; [preprint] no. 1322, 16 pp., 9 figs., March, 1924; abstract, *Mining and Metallurgy*, vol. 5, no. 211, p. 350, July, 1924.
9. The composition of melilite: *Am. Jour. Sci.*, 5th ser., vol. 8, pp. 375–384, November, 1924.
10. Isotropic quartz: *Am. Mineralogist*, vol. 9, no. 12, pp. 235–237, 2 figs., December, 1924.
11. Studies in the mica group: *Am. Jour. Sci.*, 5th ser., vol. 9, pp. 309–327, 415–430, 5 figs., April, 1925; abstract, *Am. Mineralogist*, vol. 10, no. 3, pp. 52–54, March, 1925.
12. A new theory of the composition of the zeolites: *Am. Mineralogist*, vol. 10, nos. 4–7, pp. 88–97, 112–117, 145–152, 166–174, 6 figs., April–July, 1925.
13. The FeSiO_3 – CaSiO_3 – MgSiO_3 – $\text{NaFeSi}_2\text{O}_6$ system of monoclinic amphiboles: *Am. Mineralogist*, vol. 10, no. 10, pp. 335–341, 2 figs., October, 1925.
14. Studies in the feldspar group: *Jour. Geology*, vol. 33, no. 7, pp. 714–727, 6 figs., October–November, 1925.
15. A new kind of metamorphism and its application to the theory of ore deposits: *Econ. Geology*, vol. 20, no. 7, pp. 642–645, November, 1925.
16. Chlorite as a polycomponent system: *Am. Jour. Sci.*, 5th ser., vol. 11, pp. 283–300, 4 figs., April, 1926.
17. Doubtful mineral species as illustrated by “faroelite”: *Am. Mineralogist*, vol. 11, no. 4, pp. 82–89, April, 1926.
18. (and Emmons, R. C.). Some methods for determining refractive indices: *Am. Mineralogist*, vol. 11, no. 5, pp. 115–118, 2 figs., May, 1926.
19. The chemical constitution of the tetrahedrite-tennantite system: *Am. Mineralogist*, vol. 11, no. 7, pp. 181–185, July, 1926.
20. Relations between properties and composition in the amblygonite-montebbrasite series: *Am. Mineralogist*, vol. 11, no. 9, pp. 246–249, 1 fig., September, 1926.
21. Notes on the triclinic pyroxenes: *Am. Mineralogist*, vol. 12, no. 1, pp. 10–14, January, 1927.
22. “Finger prints” of minerals: *Science*, new ser., vol. 65, p. 499, May 20, 1927.
23. “Finger prints” of minerals: *Am. Mineralogist*, vol. 12, no. 6, pp. 261–262, June, 1927.

Winchell, Alexander Newton—Continued.

24. Further studies in the mica group: *Am. Mineralogist*, vol. 12, no. 7, pp. 267-279, 2 figs., July, 1927.
25. Isomorphous relations of MgSiO_3 and AlAlO_3 in silicates: *Am. Mineralogist*, vol. 13, no. 2, pp. 52-56, 2 figs., February, 1928.
26. Additional notes on chlorite: *Am. Mineralogist*, vol. 13, no. 5, pp. 161-170, 3 figs., May, 1928.
27. The composition of muscovite (further discussion): *Am. Mineralogist*, vol. 13, no. 11, pp. 567-569, November, 1928.

Winchell, Horace Vaughan, 1865-1923. See also Wheeler, 3.

1. Geology of Pachuca and El Oro, Mexico: *Am. Inst. Min. and Met. Eng., Trans.* [preprint], no. 1074, 14 pp., 1 fig., June, 1921; vol. 66, pp. 27-41, 1 fig., 1922. Abstract, *Mining and Metallurgy*, no. 174, pp. 34-35, June, 1921.

Winchell, Newton Horace, 1839-1914.

1. (and Winchell, A. N.). Elements of optical mineralogy; an introduction to microscopic petrography. Second edition. Part 1, Principles and methods, 216 pp., 251 figs., New York, John Wiley & Sons, 1922.
2. (and Winchell, A. N.). Elements of optical mineralogy, an introduction to microscopic petrography; entirely rewritten and much enlarged by Alexander N. Winchell. 2d ed., pt. 2, Descriptions of minerals, with special reference to their optic and microscopic characters. 424 pp., 333 figs., New York, John Wiley & Sons, 1927.

Winchester, Dean Eddy.

1. Contorted bituminous shale of Green River formation in northwestern Colorado (abstract with discussion by E. O. Ulrich, David White, W. C. Alden, and G. H. Ashley): *Washington Acad. Sci., Jour.*, vol. 9, no. 10, pp. 295-296, May 19, 1919.
2. Oil shales: *Franklin Inst., Jour.*, vol. 187, no. 6, pp. 689-703, June, 1919.
3. Geology of Alamosa Creek valley, Socorro County, New Mexico, with special reference to the occurrence of oil and gas: *U. S. Geol. Survey, Bull.* 716, pp. 1-15, 5 pls. (incl. map), 1920; abstract by M. I. Goldman, *Washington Acad. Sci., Jour.*, vol. 11, no. 11, p. 260, June 4, 1921.
4. Distribution and importance of the oil-shale deposits of the United States: *Colorado School of Mines, Quart.*, vol. 17, no. 4, Supplement B, pp. 51-52, October, 1922; *American Min. Congress, Twenty-fifth Ann. Convention, Rept. of Proc.*, pp. 756-758, 1922.
5. Oil shale of the Rocky Mountain region: *U. S. Geol. Survey, Bull.* 729, 204 pp., 4 figs., 18 pls. (incl. maps), 1923.

Wing, Monta Eldo.

1. The Silurian Gastropoda of northeastern Illinois (abstract): *Chicago, Univ., Abstracts of Theses, Sci. Ser.*, vol. 1, pp. 311-317, October, 1925.

Wingard, J. H.

1. Statistics of the mineral production of Alabama for 1918: *Alabama, Geol. Survey, Bull.* no. 23, 155 pp., 1921.
2. Statistics of the mineral production of Alabama for 1919 and 1920: *Alabama, Geol. Survey, Bull.* no. 25, 146 pp., 1922.
3. Statistics of the mineral production of Alabama for 1921: *Alabama Geol. Survey, Bull.* no. 26, 111 pp., 1923.

Winters, Elizabeth. See Johnson, D. W., 14.

Winton, Hortense.

1. (and Winton, W. M., and Scott, Gayle). Fossils; Natural history manual of the T. C. U. [Texas Christian University] vicinity [Tarrant County, Texas] (fourth edition): Texas Christian Univ. Bull., vol. 20, no. 2, pp. 47-58, 1 pl., March, 1924.

Winton, Will McClain. See also Adkins, 7; Winton, H., 1.

1. (and Adkins, W. S.). The geology of Tarrant County: Texas, Univ., Bull. no. 1931, 123 pp., 6 pls., 6 figs., 2 maps, 1920.
2. (and Scott, Gayle). The geology of Johnson County: Texas, Univ., Bull. no. 2229, 68 pp., 4 figs., 4 pls., map, 1922.
3. The geology of Denton County: Texas, Univ., Bull. no. 2544, 86 pp., 8 figs., 21 pls., map, November 22, 1925.
4. Report of the Fort Worth section meeting: Jour. Paleontology, vol. 1, no. 4, pp. 311-312, January, 1928.

Wisconsin Geological Survey.

1. Fourteenth biennial report of the Commissioners of the Geological and Natural History Survey covering the period from July 1, 1922, to June 30, 1924. 44 pp., Madison, Wisconsin, 1924.

Wisser, Edward.

1. Oxidation subsidence at Bisbee, Arizona: Econ. Geology, vol. 22, no. 8, pp. 761-790, 20 figs., December, 1927.

Wissler, Stanley G. See Galloway, 8.

Withers, Spencer. See Kentucky G. S., 49.

Withers, Thomas Henry.

1. On a new brachyurous crustacean from the Upper Cretaceous of Jamaica. Annals and Mag. Nat. Hist., 9th ser., vol. 10, pp. 534-541, 2 pls., November, 1922.
2. Some Cretaceous and Tertiary decapod crustaceans from Jamaica: Annals and Mag. Nat. Hist., 9th ser., vol. 13, pp. 81-93, 3 pls., January, 1924.
3. Some decapod crustaceans (*Callianassa* and *Ranina*) from the Oligocene of Washington State, U. S. A.: Annals and Mag. Nat. Hist., 9th ser., vol. 14, pp. 121-127, 1 pl., July, 1924.
4. Decapod crustaceans from the Oligocene of Anguilla: Annals and Mag. Nat. Hist., 9th ser., vol. 14, pp. 225-233, 1 pl., August, 1924.
5. A new cirripede from the Niobrara Cretaceous of Kansas: Annals and Mag. Nat. Hist., 9th ser., vol. 17, pp. 7-11, 1 fig., January, 1926.
6. Decapod crustaceans (*Callianassa*) from the Scotland beds of Barbados: Geol. Mag., vol. 63, pp. 104-108, 1 pl., March, 1926.
7. *Scalpellum sanchezi*, sp. n., a cirripede from the lower Miocene of Cuba: Ann. and Mag. Nat. Hist., 9th ser., vol. 18, pp. 616-621, 1 fig., 1 pl., December, 1926.
8. *Ranina trechmanni*, a new Cretaceous crab from Jamaica: Geol. Mag., vol. 64, pp. 176-180, 1 fig., 1 pl., April, 1927.

Wittich, Ernesto.

1. Ueber Lavahöhlen im Pedregal von San Angel bei Mexiko: Neues Jahrb., 1916, Bd. 1, H. 3, pp. 126-133, 4 pls., July 29, 1916.

Wittich, Ernesto—Continued.

2. Fenómenos desérticos en los alrededores de San Luis Potosí: Soc. cient: "Antonio Alzate," Mem. y Rev., t. 37, no. 2, pp. 65-70, 3 pls., January, 1919.
3. Apuntes preliminares acerca de la zona minera de Guadalcázar, S. L. P. "Antonio Alzate," Mem. y Rev., t. 38, no. 3-4, pp. 101-120, 8 pls., March, 1919.
4. Apuntes preliminares acerca de la zona minera de Guadalcázar, S. L. P. [San Luis Potosí, México]: Petróleo, vol. 13, no. 196, pp. 5-6, April 10, 1920.
5. La fluorita en los criaderos de contacto y de cinabrio de Guadalcázar. S. L. P. [San Luis Potosí, México]: Petróleo, vol. 13, no. 197, p. 10, April 17, 1920.
6. Apuntes acerca del azufre con betún de las minas de Huascalámá, Cerritos, S. L. P. [San Luis Potosí, México]: Boletín Minero, t. 9, nos. 5-6, pp. 614-616, May-June, 1920.
7. Observaciones acerca de placeres de cinabrio y oro, encontrados en el distrito de Guadalcázar, S. L. P. [San Luis Potosí, México]: Boletín Minero, t. 10, nos. 3-4, pp. 253-256, September-October, 1920.
8. La emersión moderna de la costa occidental de la Baja California: Soc. cient. "Antonio Alzate," Mem., t. 35, nos. 3-4, pp. 121-144, 10 pls., 1 fig., August, 1920.
9. Estudios geológicos sobre el mineral de El Chico, Hidalgo: Soc. cient. "Antonio Alzate," Mem., t. 38, nos. 9-10, pp. 321-349, 6 pls., July, 1920.
10. Contribución á la geología de Atotonilco el Grande, Hidalgo: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 38, nos. 11-12, pp. 407-427, 4 pls., 3 figs., January, 1921.
11. Ueber das Vorkommen von Quecksilber-Sulfiden in Sanden der Goldseifen bei Guadalcázar, San Luis Potosí, Mexiko: Zeitschr. prakt. Geologie, Jg. 29. H. 6, pp. 91-93, June, 1921.
12. Observaciones geológicas en la altiplanicie de San Juan de los Llanos, Puebla: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 39, no. 9-12, pp. 597-613, December, 1921; Bol. Minero, t. 12, no. 3, pp. 306-314, September, 1921.
13. La fluorita en la República Mexicana: Bol. Minero, t. 12, no. 4, pp. 430-433, October, 1921.
14. (and Kratzert, J.). Ueber ein neues Vorkommen von Dumortierit im Granit bei Guadalcázar, Nordmexiko: Centralbl. Mineralogie, no. 21, pp. 648-650, November 1, 1921.
15. (and Kratzert, J.). Contribuciones á la mineralogía mexicana: Soc. cient. "Antonio Alzate," Mem. y Rev., t. 39, no. 9-12, pp. 651-661, December, 1921.
16. (and Ragotzy, Federico). La geologia de la región minera de Guadalcázar, San Luis Potosí: Bol. Minero, t. 12, no. 6, pp. 661-667, 12 pls., December, 1921; Soc. cient. "Antonio Alzate," Mem. y Rev., t. 40, nos. 2-6, pp. 145-178, 1 pl., 1922.
17. El descubrimiento del vanadio: Bol. Minero, t. 13, no. 1, pp. 4-15, January, 1922.
18. Observaciones acerca de la baritina en México: Bol. Minero, t. 13, no. 3, pp. 312-318, March, 1922.
19. Las calizas coraligenas del Tajo de Andonegui, Tampico, México: Bol. Minero, t. 13, no. 3, pp. 318-320, March, 1922.

Wittich, Ernesto—Continued.

20. (and Kratzert, J.). Ueber vulkanische Quarz- und Glasaschen aus den Schuttkegeln von Guadalcázar, San Luis Potosí, Mexiko: *Centralbl. Mineralogie*, no. 9, pp. 258–261, May 1, 1922.
21. Los levantamientos de las costas mexicanas, en relación con las teorías sobre los movimientos de los continentes: *Bol. Minero*, t. 14, no. 1, pp. 7–15, July, 1922.
22. (and Kratzert, J.). Contribuciones á la mineralogía mexicana, IV: *Soc. cient. "Antonio Alzate," Mem. y Rev.*, t. 40, no. 7–9, pp. 423–433, July–September, 1922.
23. Geologie und Nutzmineralien. In Mexiko; kurzer Bericht über die wirtschaftlichen Fortschritte im letzten Jahrzehnt mit statistischen Angaben, graphischen Darstellungen, und Karten. *Consulado general de México en Alemania, Hamburgo*, 1923.
24. Beitrag zur Geologie der Golfregion von Mexiko: *Naturh.-medizin. Ver. Heidelberg, Verh.*, N. F., Bd. 15, Beilageheft 2, pp. 1–4, 1923.
25. Los minerales de Huautla, Morelos, y Chiautla, Puebla: *Bol. Minero*, t. 15, no. 3, pp. 320–345, 8 pls. (incl. map), March, 1923.
26. (and Kratzert, J.). Contribuciones á la mineralogía mexicana: *Bol. Minero*, t. 15, no. 4, pp. 475–479, April, 1923.
27. Skizze der Geologie und der Minerallagerstätten von Mexiko: *Freiberger geol. Gesellschaft, X. Bericht*, pp. 13–18, April, 1925 [not seen]; abstract, *Geol. Zentralblatt*, Bd. 32, no. 7, pp. 327–328, October 15, 1925.
28. Los depósitos de Tecal (ónix-mármol) y las salinas de la región de Chila y Tulcingo, Estado de Puebla: *Soc. cient. "Antonio Alzate," Mem. y rev.*, t. 45, nos. 1–6, pp. 115–128, 1926.

Wolf, Albert G.

1. Gulf coast salt domes: *Colorado School of Mines Mag.*, vol. 10, no. 9, pp. 171–177, 3 figs., September, 1920.
2. Relation of topography to the oil fields of the Texas Gulf Coastal region: *Eng. and Min. Jour.*, vol. 111, no. 11, pp. 474–475, March 12, 1921.
3. The White Point gas field [San Patricio County, Texas]: *Eng. and Min. Jour.*, vol. 113, no. 4, pp. 174–175, 4 figs., January 28, 1922.
4. The origin of salt domes: *Eng. and Min. Jour.-Press*, vol. 115, no. 9, pp. 412–414, March 3, 1923.
5. Big Hill salt dome, Matagorda County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 9, no. 4, pp. 711–737, 3 figs., July, 1925; *Geology of salt dome oil fields*, pp. 691–717, 3 figs., 1926.
6. Hauerite in a salt-dome cap rock [Matagorda County, Texas]: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 5, pp. 531–532, 1 fig. May, 1926.

Wolff, John Eliot.

1. Charles Richard Van Hise (1857–1918): *Am. Acad. Arts and Sci., Proc.*, vol. 55, no. 10, pp. 511–512, November, 1920.
2. Mount Monadnock, Vermont, a Montereian Hill (abstract with discussion by F. D. Adams and others): *Geol. Soc. America, Bull.*, vol. 33, no. 1, pp. 127–128, March 31, 1922.
3. Cloudburst on San Gabriel Peak, Los Angeles County, California: *Geol. Soc. America, Bull.*, vol. 38, no. 3, pp. 443–450, 7 figs., September 1927; abstract, vol. 39, no. 1, p. 266, March 30, 1928.

Wolff, Julius Frederic.

1. Recent geologic development on the Mesabi iron range, Minnesota (discussion): Am. Inst. Min. and Met. Eng., Trans., vol. 61, pp. 113-115, 1920.

Wolford, John J. See Wentworth, 38.

Wood, Casey A.

1. The fossil eggs of Bermudan birds: Ibis, 11th ser., vol. 5, no. 2, pp. 193-207, 3 pls., April, 1923.

Wood, George McLane.

1. The geology of Mount Desert: Text on back of topographic sheet, Maine (Hancock County), Lafayette National Park, U. S. Geol. Survey, 1922.

Wood, Harry Oscar. See also Anderson, J. A., 2; Willis, 10, 17.

1. The tectonic aspect of volcanic eruption in Hawaii: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, pp. 346-353, 1921.
2. "Regional" versus "world" seismology in relation to the Pacific basin: Pan-Pacific Scientific Conference, First, Proc., Bernice P. Bishop Mus., Spec. Pub. no. 7, pt. 2, pp. 387-391, 1921.
3. On a piezo-electrical accelerograph: Seismol. Soc. America, Bull., vol. 11, no. 1, pp. 15-57, 9 figs., 2 pls., March, 1921.
4. Some considerations touching on isostasy: Geol. Soc. America, Bull., vol. 33, no. 2, pp. 303-316, 1 fig., June 30, 1922.
5. Earthquake reports: Seismol. Soc. America, Bull., vol. 14, no. 1, pp. 60-64, March, 1924.

Wood, Horace Elmer, 2d.

1. The problem of the *Uintatherium* molars: Am. Mus. Nat. Hist., Bull., vol. 48, pp. 599-604, 4 figs., 1923.
2. The position of the "sparassodonts"; with notes on the relationships and history of the Marsupialia: Am. Mus. Nat. Hist., Bull., vol. 51, pp. 77-101, 57 figs., 2 tables, September 19, 1924.
3. (and Mannhardt, L. Alfred). Oligocene section in Battle Creek Canyon, Washington County, South Dakota (abstract): Geol. Soc. America, Bull., vol. 36, no. 1, pp. 222-223, March 30, 1925.
4. *Hyracodon petersoni*, a new cursorial rhinoceros from the lower Oligocene: Carnegie Mus., Annals, vol. 16, no. 2, pp. 315-318, 1 fig., 1 pl., March, 1926.
5. Some early Tertiary rhinoceroses and hyracodonts (abstract): Geol. Soc. America, Bull., vol. 37, no. 1, pp. 238-239, March 30, 1926.
6. Some early Tertiary rhinoceroses and hyracodonts: Bull. Am. Paleont., vol. 13, no. 50, 104 pp., 7 pls., December 3, 1927.

Woodard, John.

1. Origin of prairies in Illinois: Illinois State Acad. Sci., Trans., vol. 16, pp. 259-263, 1923.

Woodbridge, Dwight Edwards.

1. Iron-ore deposits on the Belcher Islands [Hudson Bay]: Eng. and Min. Jour., vol. 112, no. 7, pp. 251-254, 4 figs., August 13, 1921.

Woodford, Alfred Oswald. See also Clark, B. L., 18.

1. The Catalina metamorphic facies of the Franciscan series: California, Univ., Dept. Geol. Sci., Bull., vol. 15, no. 3, pp. 49-68, 2 figs., 3 pls., September 19, 1924.

Woodford, Alfred Oswald—Continued.

2. Methods for heavy mineral investigations: *Econ. Geology*, vol. 20, no. 1, pp. 103–104, January–February, 1925.
3. The San Onofre breccia; its nature and origin: *California, Univ., Dept. Geol. Sciences, Bull.*, vol. 15, no. 7, pp. 159–280, 11 figs., 13 pls. (incl. maps), May 20, 1925.
4. (and Bailey, T. L.). Northwestern continuation of the San Onofre breccia: *California, Univ., Dept. Geol. Sci., Bull.*, vol. 17, no. 5, pp. 187–191, 1 fig., March 9, 1928.
5. (and Harris, T. F.). Geology of Blackhawk Canyon, San Bernardino Mountains, California (abstract): *Geol. Soc. America Bull.*, vol. 39, no. 1, p. 268, March 30, 1928.
6. The San Quintin volcanic field, Lower California: *Am. Jour Sci.*, 5th ser., vol. 15, pp. 337–345, 3 figs., April, 1928.
7. (and Harriss, T. F.). Geology of Blackhawk Canyon, San Bernardino Mountains, California: *California, Univ., Dept. Geol. Sci., Bull.*, vol. 17, no. 8, pp. 265–304, 4 figs., 6 pls., June 20, 1928.

Woodring, Wendell Phillips. See also Vaughan, 16.

1. Stratigraphy, structure, and possible oil resources of the Miocene rocks of the central plain: *Haiti, Geol. Survey*, 19 pp., map, Washington, 1922.
2. Middle Eocene Foraminifera of the genus *Dictyoconus* from the Republic of Haiti: *Washington Acad. Sci., Jour.*, vol. 12, no. 10, pp. 244–247, May 19, 1922.
3. Tertiary mollusks of the genus *Orthaulax* from the Republic of Haiti, Porto Rico, and Cuba: *U. S. Nat. Mus., Proc.*, vol. 64, art. 1, 12 pp., 1 pl., 1923.
4. An outline of the results of a geological reconnaissance of the Republic of Haiti: *Washington Acad. Sci., Jour.*, vol. 13, no. 7, pp. 117–129, April 4, 1923.
5. (and Brown, John S., and Burbank, Wilbur S.). Geology of the Republic of Haiti. 631 pp. (French edition, 710 pp.), 37 figs., 40 pls. (incl. maps), Republic of Haiti, Department of Public Works, Port-au-Prince, 1924.
6. Some new Eocene Foraminifera of the genus *Dictyoconus*: *Geology of the Republic of Haiti*, pp. 608–610, illus., 1924.
7. (and Mansfield, Wendell C.). Some new middle Eocene and lower Miocene mollusks: *Geology of the Republic of Haiti*, pp. 611–613, illus., 1924.
8. Tertiary history of the north Atlantic Ocean: *Geol. Soc. America, Bull.*, vol. 35, no. 3, pp. 425–435, September 30, 1924; abstract, with discussion by Charles Schuchert, A. C. Lawson, W. M. Bowie, and W. H. Hobbs, no. 1, pp. 84–85, March 30, 1924; abstract, *Pan-Am. Geologist*, vol. 41, no. 2, pp. 142–143, March, 1924.
9. West Indian, Central American, and European Miocene and Pliocene mollusks: *Geol. Soc. America, Bull.*, vol. 35, no. 4, pp. 867–886, 4 figs., December 30, 1924; abstract, no. 1, pp. 175–176, March 30, 1924.
10. Miocene mollusks from Bowden, Jamaica; pelecypods and scaphopods: *Carnegie Inst. Washington, Pub. no. 366*, 222 pp., 28 pls., May, 1925.
11. Quaternary reef caps of Republic of Haiti (abstract): *Pan-Am. Geologist*, vol. 43, no. 5, pp. 376–377, June, 1925.
12. *Arca patricia* Sowerby, a Miocene fossil from the Dominican Republic: *Science*, new ser., vol. 62, pp. 518–519, December 4, 1925.

Woodring, Wendell Phillips—Continued.

13. Miocene climate of tropical America (abstract): Washington Acad. Sci., Jour., vol. 16, no. 3, p. 77, February 4, 1926.
14. Pliocene *Viviparus*-like opercula from California: Nautilus, vol. 39, no. 4, pp. 109-111, April, 1926.
15. Fossil *Viviparus*-like calcareous opercula: Nautilus, vol. 40, no. 1, pp. 12-14, July, 1926.
16. How fossils got into the rocks: Sci. Monthly, vol. 23, no. 4, pp. 337-345, 6 figs., October, 1926.
17. American Tertiary mollusks of the genus *Clementia*: U. S. Geol. Survey, Prof. Paper 147, pp. 25-42, 1 fig., 4 pls., November 22, 1926.
18. Geologic history and paleobiologic significance of the genus *Clementia* (abstract): Washington Acad. Sci., Jour., vol. 17, no. 5, p. 128, March 4, 1927.
19. (and Roundy, P. V.). Geology and oil development of the Elk Hills, California (abstract): Washington Acad. Sci., Jour., vol. 17, no. 10, pp. 271-272, May 19, 1927.
20. Distribution in tropical America of turritellas of phylum of *Turritella ocoyana* (abstract): Pan-Am. Geologist, vol. 49, no. 4, pp. 314-315, May, 1928.
21. Ecology of mollusks of Bowden formation, Jamaica (abstract): Pan-Am. Geologist, vol. 49, no. 14, pp. 317-318, May, 1928.
22. Miocene mollusks from Bowden, Jamaica; Part II, Gastropods and discussion of results: Carnegie Inst. Washington, Pub. no. 385, 564 pp., 3 figs., 40 pls., November 28, 1928.
23. Tectonic features of the Caribbean region: Third Pan-Pacific Sci. Cong., Tokyo, 1926, Proc., pp. 401-431, 1 fig., 1928.

Woodruff, Elmer Grant. See also Brokaw, 1; Moore, R. C., 17; Schuchert, 8.

1. Petroliferous provinces: Am. Inst. Min. and Met. Eng., Bull., no. 150, pp. 907-912, 1 fig., June, 1919, discussion by Irving Perrine and C. W. Washburne, Bull. no. 156, pp. 3146-3147, December, 1919; Trans., vol. 65, pp. 199-216, 1 fig., 1921.
2. Notebook form and symbols for petroleum geologists: Econ. Geology, vol. 14, no. 5, pp. 424-426, 2 figs., August, 1919.
3. The science of petroleum geology: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 4, pp. 446-450, July-August, 1921.
4. (and Cooper, C. L.). Oil and gas in Oklahoma; geology of Rogers County: Oklahoma Geol. Survey, Bull. no. 40-U, 24 pp., 3 figs., 2 pls (incl. map), March, 1928.

Woods, Sam H. See Tomlinson, 4.

Woods, Thomas S.

1. The porphyry intrusions of the Michigan copper district: Eng. and Min. Jour., vol. 107, pp. 299-302, 3 figs., February 15, 1919.

Woodward, Arthur Smith.

1. A supposed ancestral man in North America [*Hesperopithecus harold-cookii*]: Nature, vol. 109, p. 750, June 10, 1922.
2. Dr. John M. Clarke: Nature, vol. 116, p. 368, September 5, 1925.
3. Dr. C. D. Walcott: Nature, vol. 119, pp. 325-326, February 26, 1927.

Woodward, Robert Simpson, 1849-1924.

1. The compressibility of the earth (abstract): Washington Acad. Sci., Jour., vol. 13, no. 3, pp. 44-45, February 4, 1923.

Woodworth, Jay Backus, 1865-1925. See also Brown C. W., 2; Foye, 4.

1. Relations of fault-block mountains to folded chains (abstract with discussion by W. H. Hobbs and W. M. Davis): *Geol. Soc. America, Bull.*, vol. 31, no. 1, pp. 115-116, March 31, 1920.
2. Report on the department of geology and geography: Harvard College, *Mus. Comp. Zool., Ann. Rept.*, 1920-21, pp. 13-16, 1921.
3. Cross section of the Appalachians in southern New England: *Geol. Soc. America, Bull.*, vol. 34, no. 2, pp. 253-261, June 30, 1923.

Woolard, Edgar W.

1. The Virginia earthquake of September 5, 1919: *Monthly Weather Review*, vol. 47, p. 839, November, 1919.

Woolnough, W. G.

1. Carbon ratios as an index of oil and gas: *Econ. Geology*, vol. 23, no. 7, pp. 809-810, November, 1928.
2. Origin of white clays and bauxite, and chemical criteria of peneplanation: *Econ. Geology*, vol. 23, no. 8, pp. 887-894, December, 1928.

Woolsey, W. J.

1. Asbestos in California: *Pacific Min. News*, vol. 1, no. 4, pp. 104-106, 4° figs., August, 1922.

Wooster, Lyman Child.

1. Glacial moraines in the vicinity of Estes Park, Colorado: *Kansas Acad. Sci., Trans.*, vol. 29, pp. 91-94, 1920.
2. The geology of Kansas. 43 pp., 6 figs. [Emporia, Kansas], 1928. [Private publication.]

Worcester, Philip George.

1. The geology of the Ward region, Boulder County, Colorado: *Colorado Geol. Survey, Bull.* 21, 74 pp., 2 maps [1921].
2. The physiography of Colorado (abstract): *Chicago, Univ., Abstracts of Theses, Sci. Ser.*, vol. 2, pp. 239-247, September, 1926.

Wordie, J. M.

1. The Cambridge expedition to east Greenland in 1926; geology: *Geog. Jour.*, vol. 70, no. 3, pp. 252-253, September, 1927.

Workman, L. E. See also Bell, A. H., 8.

1. The geological columnar section at Monmouth, Illinois, as revealed by the new deep wells: *Illinois State Acad. Sci., Trans.*, vol. 19, pp. 300-305, 1926.

Wortman, Jacob Lawson, 1856-1926.

1. On some hitherto unrecognized reptilian characters in the skull of the Insectivora and other mammals: *U. S. Nat. Mus., Proc.*, vol. 57, pp. 1-52, 16 figs., 1920.

Wrather, William Embry. See also Brokaw, 1; Stone, 11.

1. The Vinton, Louisiana, oil field: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 2, pp. 339-340, March-April, 1921.
2. The Mexia [oil] pool, Mexia, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 3, pp. 419-421, May-June, 1921.
3. Supposed igneous rock from Wichita County, Texas, wells: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 4, pp. 512-515, 1 pl., July-August, 1921.

Wrather, William Embry—Continued.

4. The Mirando Oil Company well, Zapata County, Texas: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 5, no. 5, pp. 625-626, September-October, 1921.
5. Dinosaur tracks in Hamilton County, Texas: *Jour. Geology*, vol. 30, no. 5, pp. 354-360, 5 figs., July-August, 1922.
6. Obituary, Rollin D. Salisbury: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 6, no. 6, pp. 563-566, 2 figs. (portr.), November-December, 1922.
7. Memorial of William Kennedy: *Geol. Soc. America, Bull.*, vol. 39, no. 1, pp. 29-34, portr., March 30, 1928.
8. What of our future oil supply?: *Econ. Geology*, vol. 23, no. 3, pp. 331-333, May, 1928.

Wright, Albert, jr.

1. (and Sweet, P. W. K.). The Jurassic as a source of oil in western Cuba: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 8, no. 4, pp. 516-519, July-August, 1924.

Wright, Clarence A. See Varley, 1.

Wright, Douglas G. H.

1. The Black River area: Ontario Dept. Mines, 30th Ann. Rept., vol. 30, pt. 6, pp. 27-62, 18 figs., map, 1922.
2. Geology of the Watabeag area, district of Timiskaming and Cochrane: Ontario Dept. Mines, 31st Ann. Rept., vol. 31, pt. 7, 33 pp., 15 figs., map, 1922.
3. (and Segsworth, Walter E.). Extension of the Porcupine gold belt into Quebec: *Eng. and Min. Jour.-Press*, vol. 117, no. 19, pp. 763-764, 1 fig., May 10, 1924.
4. The Red Lake gold area [District of Patricia, Ontario]: *Eng. and Min. Jour.*, vol. 122, no. 1, pp. 15-20, 1 fig. (map), July 3, 1926.

Wright, Floyd E.

1. Oil and gas [in Indiana]: Indiana, Dept. Geology and Nat. Res., 41st Ann. Rept., pp. 114-121, 2 maps, 1917.
2. Report of the State supervisor of natural gas: Indiana, Year Book 1918, pp. 207-212, 1919.

Wright, Frank James.

1. The physiography of the upper James River basin in Virginia: Virginia Geol. Survey, Bull. no. 11, 67 pp., 7 figs., 13 pls., 1925.
2. The Blue Ridge of Southern Virginia and western North Carolina: Denison Univ. Bull., Sci. Lab., Jour., vol. 22, pp. 116-132, 4 figs., 2 pls., March, 1927.
3. Gravels on the Blue Ridge: Denison Univ. Bull., Sci. Lab., Jour., vol. 22, pp. 133-135, 1 fig., March, 1927.
4. The erosional history of the Blue Ridge (abstract): *Ohio Acad. Sci., Proc.*, vol. 8, pt. 4, p. 180, 1928; *Ohio Jour. Sci.*, vol. 28, no. 3, p. 158, May, 1928.
5. The erosional history of the Blue Ridge: Denison Univ., Bull., vol. 28, no. 10, Sci. Lab., Jour., vol. 23, pp. 321-344, 6 pls., December 31, 1928.

Wright, Frederick Eugene. See also *Am. Geophysical Union*, 1; Bowie, 24; Smith, G. O., 31.

1. Polarized light in the study of ores and metals: *Am. Philos. Soc., Proc.*, vol. 58, no. 7, pp. 401-447, 12 figs., 1919.

Wright, Frederick Eugene—Continued.

2. Examination of ores and metals in polarized light: *Mining and Metallurgy*, no. 158, sec. 1 pp. 44-45 (abstract), sec. 9, 12 pp., 3 figs., February, 1920; *Am. Inst. Min. and Met. Eng., Trans.*, vol. 63, pp. 370-381, 3 figs., 1920.
3. Experimental studies of the formation of jointing planes (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 120, March 31, 1920.
4. Experiments illustrating development of igneous rock textures (abstract): *Geol. Soc. America, Bull.*, vol. 31, no. 1, p. 141, March 31, 1920.
5. Methods for distinguishing natural from cultivated pearls: *Washington Acad. Sci., Jour.*, vol. 13, no. 13, pp. 282-287, 2 figs., July 19, 1923.
6. Stereoscopic photography in geological field work: *Washington Acad. Sci., Jour.*, vol. 14, no. 3, pp. 63-72, 2 figs., February 4, 1924; abstract, *Geol. Soc. America, Bull.*, vol. 35, no. 1, p. 113, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 156, March, 1924.
7. Gravity and underground lava (abstract with discussion): *Washington Acad. Sci., Jour.*, vol. 15, no. 18, p. 421, November 4, 1925; *Bull. volcanologique*, 2^e ann., nos. 5-6, pp. 332-333, 1925.
8. Memorial of Robert Simpson Woodward: *Geol. Soc. America, Bull.*, vol. 37, no. 1, pp. 115-134, 1 pl. (portr.), March 30, 1926.
9. (and Allen, E. T.). Curtisite, a new organic mineral from Skaggs Springs, Sonoma County, California (abstract): *Am. Mineralogist*, vol. 11, no. 3, p. 67, March, 1926.
10. Gravity on the earth and on the moon: *Sci. Monthly*, vol. 24, no. 5, pp. 448-462, May, 1927.
11. Factors bearing on the formation of craters on the moon: *Nat. Research Council, Bull.* no. 61, pp. 266-269, July, 1927.

Wright, George Frederick, 1838-1921.

1. Charles Conrad Abbott and Ernest Volk [human remains in Trenton, New Jersey, gravels]: *Science*, new ser., vol. 50, pp. 451-453, November 14, 1919.
2. The ice age in North America. Sixth enlarged edition, supplementary chapter [preface]. 24 pp., 1 fig., *Bibliotheca Sacra Company*, Oberlin, Ohio [1920?].
- 3 The preglacial outlet of Lake Erie: *Science*, new ser., vol. 53, pp. 286-287, March 25, 1921.
4. Origin and distribution of the loess (abstract): *Geol. Soc. America, Bull.*, vol. 32, no. 1, pp. 48-49, March 31, 1921.

Wright, John Frank.

1. Brockville-Malloryton map area, Ontario: *Canada, Geol. Survey, Summ. Rept.*, 1920, pt. D, pp. 78-84, 1 fig., 1921.
2. Brockville-Mallorytown map area, Ontario: *Canada, Geol. Survey, Mem.* 134, 63 pp., 2 figs., 4 pls., map, 1923.
3. Rice Lake map area, southeastern Manitoba: *Canada, Geol. Survey, Summ. Rept.*, 1922, pt. C, pp. 45-82, 5 figs., 3 pls., map, 1923.
4. Geology and mineral prospects of the northern part of Beresford Lake map area, southeast Manitoba: *Canada, Geol. Survey, Summ. Rept.*, 1923, pt. B, pp. 86-104, 1 fig., map, 1924.
5. Wabigoon and Trap Lake soapstone deposits, Ontario: *Canadian Min. Jour.*, vol. 45, no. 36, pp. 871-872, September 5, 1924.
6. The central Manitoba gold field; some geological notes on the east central Manitoba (Rice Lake) gold area: *Canadian Min. Jour.*, vol. 46, no. 4, pp. 91-95, 5 figs. (incl. map), January 23, 1925.

Wright, John Frank—Continued.

7. Oiseau and Maskwa copper and copper-nickel deposits, southeastern Manitoba: Canadian Inst. Min. and Met., Bull. no. 155, pp. 220-231, 1 fig. (map), March, 1925; Trans., vol. 28, pp. 161-173, 1 fig. (map) [1926].
8. The geology of the Brockville-Mallorytown map area [Ontario] (abstract): Chicago Univ., Abstracts of Theses, Sci. Ser., vol. 1, pp. 319-323, October, 1925.
9. Geology and mineral deposits of the east central Manitoba mining district (with discussion): Canadian Inst. Min. and Met., Bull. no. 164, pp. 1146-1164, 9 figs., December, 1925; Trans., vol. 28, pp. 311-329, 9 figs. [1926].
10. Geology and mineral deposits of Oiseau River map area, Manitoba; Canada, Geol. Survey, Summ. Rept., 1924, pt. B, pp. 51-104, 1 fig., 4 pls., 2 maps, 1926.
11. Oxford and Knee lakes area, northern Manitoba: Canada, Geol. Survey, Summ. Rept., 1925, pt. B, pp. 16-26, map, 1926.
12. Island Lake area, Manitoba: Canada, Geol. Survey, Summ. Rept., 1927, pt. B, pp. 54-80, 2 pls. (maps), 1928.

Wright, Lawrence B. See also Hosted, 1.

1. (and Hosted, J. O.). Geological methods of the Homestake Mining Co., Lead, South Dakota: Eng. and Min. Jour., vol. 112, no. 23, pp. 886-889, 6 figs., December 3, 1921.
2. Porphyries of the Porcupine area [Ontario]: Eng. and Min. Jour.-Press, vol. 119, no. 11, pp. 446-447, March 14, 1925.
3. The relation of the Tertiary rhyolites to mineralization in the Homestake mine: Black Hills Engineer, vol. 14, no. 3, pp. 163-166, 1 fig., May, 1926.

Wright, William Josiah.

1. Investigations in New Brunswick and Nova Scotia: Canada, Geol. Survey, Summ. Rept., 1919, pt. F, pp. 1-2, 1920.
2. Geology of the Moncton map-area [New Brunswick]: Canada, Geol. Survey, Mem. 129, 69 pp., 3 figs., 7 pls., 4 maps, 1922.

Wuensch, C. Erb.

1. Statistical treatise on gold and silver: Colorado School of Mines Mag., vol. 9, no. 5, pp. 109-113, May, 1919.
2. Secondary enrichment at Eagle mine, Bonanza, Colorado: Am. Inst. Min. and Met. Eng., Trans., vol. 69, pp. 96-109, 1 fig., 1923; [preprint] no. 1251, 14 pp., 1 fig., June, 1923; abstract, Mining and Metallurgy, vol. 4, no. 198, pp. 307-308, 1 fig., June, 1923.

Wyckoff, Dorothy.

1. Maps without culture; a new aid in the teaching of physiography: Jour. Geography, vol. 25, no. 8, pp. 307-309, November, 1926.

Wyckoff, Ralph Walter Graystone. See also Bowen, 21.

1. The crystal structures of some carbonates of the calcite group: Am. Jour. Sci., 4th ser., vol. 50, p. 317-360, 18 figs., November, 1920.
2. The determination of the structure of crystals: Franklin Inst., Jour., vol. 191, no. 2, pp. 199-230, 26 figs., February, 1921.
3. The crystal structure of alabandite (MnS) [Puebla, Mexico]: Am. Jour. Sci., 5th ser., vol. 2, pp. 239-249, 4 figs., November, 1921.

Wyckoff, Ralph Walter Graystone—Continued.

4. A survey of existing crystal structure data: Franklin Inst., Jour., vol. 195, no. 2, pp. 183–210, no. 3, pp. 349–365, no. 4, pp. 531–552, 20 figs., February, March, and April, 1923.
5. (and Merwin, H. E., and Washington, H. S.). X-ray diffraction patterns of the pyroxenes (abstract, with discussion by W. P. White): Geol. Soc. America, Bull., vol. 35, no. 1, pp. 110–111, March 30, 1924; abstract, Pan-Am. Geologist, vol. 41, no. 2, pp. 154–155, March, 1924.
6. (and Merwin, Herbert E.). The crystal structure of dolomite: Am Jour. Sci., 5th ser., vol. 8, pp. 447–461, 8 figs., December, 1924; abstract, Geol. Soc. America, Bull., vol. 35, no. 1, p. 111, March 30, 1924; Pan-Am. Geologist, vol. 41, no. 2, p. 155, March, 1924.

Wylie, Charles Clayton.

1. The Tilden meteor, an Illinois daylight fall: Science, new ser., vol. 66, p. 451, November 11, 1927.

Wyman, L. E.

1. Notes on the Pleistocene fossils obtained from Rancho La Brea asphalt pits: Los Angeles County Museum of History, Science, and Art, Dept. Natural Sciences, Misc. Pub. no. 2, 35 pp., 22 figs., May, 1918.

Wysor, D. C.

1. Diaspore clay of Arkansas and Missouri: Am. Ceramic Soc., Jour., vol. 6, no. 3, pp. 501–505, 1 fig., March, 1923.

Yabe, Hisakatsu.

1. (and Shimizu, Saburo). A note on the genus *Mortonicerias*: Japanese Jour. Geology and Geography, vol. 2, no. 2, pp. 27–30, Tokyo, 1923.

Yates, Arthur B.

1. The occurrence of quartz in the Homestake mine [Lead, South Dakota]: Black Hills Engineer, vol. 14, no. 3, pp. 167–171, 2 figs., May, 1926.

Yeo, Herbert W.

1. Report on the Canadian River investigation: New Mexico, State Eng., 8th Bienn. Rept., pp. 259–297 [1928].

Yermoloff, Nicholas.

1. The diatomaceous earth of Lompoc, Santa Barbara County, California: Geol. Mag., vol. 57, pp. 271–277, June, 1920.

Young, A. C. See Rogers, W. R., 5, 7.

Young, Clinton Mason.

1. Kansas coal; occurrence and production: Kansas, Univ., Bull., vol. 26, no. 5, Eng. Bull. no. 13, pp. 13–123, 29 figs., March 1, 1925.

Young, George Albert. See also Canada G. S., 3.

1. Burnthill Brook map area, New Brunswick: Canada Geol. Survey, Summ. Rept., 1917, pt. F, pp. 1–15, 1 pl., 1 fig. (maps), 1918.
2. Coal seams of Gloucester County, New Brunswick: Canada, Geol. Survey, Summ. Rept., 1920, pt. E, pp. 1–5, 1921.
3. Iron-bearing rocks of Belcher Islands, Hudson Bay: Canada, Geol. Survey, Summ. Rept., 1921, pt. E, 61 pp., 3 figs. (maps), 1922.
4. Proposals regarding a time scale for the pre-Cambrian: Roy. Soc. Canada, Proc. and Trans., 3d ser., vol. 17, sec. 4, pp. 45–59, May, 1923.

Young, George Albert—Continued.

5. Geology and economic minerals of Canada: Canada, Geol. Survey, Econ. Geology ser., no. 1, 187, 57 pp., 1 fig., 38 pls., 2 maps, 1926. [Pub. no. 2065.]
6. (and Uglow, W. L.). The iron ores of Canada; Volume 1, British Columbia and Yukon: Canada, Geol. Survey, Econ. Geology ser., no. 3, 253 pp., 44 figs., 1926.

Young, George Joseph.

1. Divide silver-gold district of Nevada: Eng. and Min. Jour., vol. 109, pp. 62-66, 7 figs., January 10, 1920.
2. Collapse of mountain summits: Sierra Club Bull., vol. 11, no. 3, pp. 290-291, 1922.
3. The Salmon River district of British Columbia and contiguous Alaska: Pacific Min. News, vol. 1, no. 8, pp. 225-230, 6 figs., December, 1922.

Young, Jackson. See also Moulton, 22.

Young, Jacob W.

1. The halogen salts of silver at Wonder, Nevada: Econ. Geology, vol. 14, no. 5, pp. 427-430, August, 1919.
2. The formation of the Sevier Valley in Utah: Eng. and Min. Jour., vol. 110, no. 17, p. 803, October 23, 1920.
3. The filling of fissure veins: Eng. and Min. Jour.-Press, vol. 116, no. 15, pp. 639-640, October 13, 1923.
4. The Sudbury [Ontario] ore deposits: Econ. Geology, vol. 19, no. 7, pp. 677-681, November, 1924.
5. Origin of certain carbonaceous materials: Eng. and Min. Jour.-Press, vol. 118, no. 25, pp. 982-983, December 20, 1924.
6. On the inorganic origin of the hydrocarbons: Canadian Inst. Min. and Met., Bull. no. 162, pp. 952-966, October, 1925.
7. Angular inclusions in ore deposits (discussion): Econ. Geology, vol. 21, no. 4, pp. 402-403, June-July, 1926.

Zambonini, Ferruccio.

1. The isomorphism of albite and anorthite (abstract by H. S. Washington): Am. Mineralogist, vol. 8, no. 5, pp. 81-92, May, 1923.

Zapffe, Carl. See also Allen, R. C., 2.

1. Manganiferous iron ores of Cuyuna district, Minnesota: Am. Inst. Min. and Met. Eng., Trans., vol. 71, pp. 372-385, 1925 (with discussion); also [preprint], no. 1390, 1924; abstract, Mining and Metallurgy, vol. 6, no. 227, pp. 573-574, November, 1925.
2. Stratigraphy and correlation of the Cuyuna iron ore district, Minnesota (with discussion by Hugh M. Roberts): Lake Superior Min. Inst., Proc. 24th Ann. Meeting, vol. 24, pp. 89-105, pl. (map), 1925.
3. Further data on the correlation of the Cuyuna iron-bearing member [Minnesota]: Lake Superior Min. Inst., Proc., vol. 25, pp. 219-227, 2 figs., 1926.
4. Reserves of Lake Superior maganiferous iron ores: Am. Inst. Min. and Met. Eng., Trans., vol. 75, pp. 346-371, 3 figs., 1927.
5. Geologic structure of the Cuyuna iron district, Minnesota: Econ. Geology, vol. 23, no. 6, pp. 612-646, 11 figs., September-October, 1928.

Zavaritsky, A. N.

1. Classification of magmatic ore deposits: Econ. Geology, vol. 22, no. 7, pp. 678-686, November, 1927.

Ziegler, Victor.

1. Popular oil geology. 2d ed., 171 pp., 62 figs., New York, John Wiley & Sons, 1920.
2. Geologic and economic features of oil structures: *Econ. Geology*, vol. 15, no. 3, pp. 247-258, April-May, 1920.

Zies, Emanuel George. See also Allen, E. T., 2.

1. The fumarolic incrustations in the Valley of Ten Thousand Smokes: *Nat. Geog. Soc., Contributed Technical Papers, Katmai ser.*, vol. 1, no. 1, pp. 157-179, 2 figs., 1924.
2. Fumarolic incrustations of the Katmai region (abstract): *Geol. Soc. America, Bull.*, vol. 35, no. 1, p. 123, March 30, 1924; *Pan-Am. Geologist*, vol. 41, no. 2, p. 158, March, 1924.
3. Hot springs of the Valley of Ten Thousand Smokes: *Jour. Geology*, vol. 32, no. 4, pp. 303-310, 1 fig., May-June, 1924.
4. The concentration of metallic constituents by volcanic emanations: *Nat. Research Council, Bull.* no. 61, pp. 263-265, July, 1927.
5. The acid gases contributed to the sea during volcanic activity (abstract): *Washington Acad. Sci., Jour.*, vol. 18, no. 19, pp. 511-512, November 19, 1928.

Zodac, Peter.

1. Rocks and Minerals, published quarterly at Peekskill, New York, vol. 1, no. 1, September, 1926-vol. 3, no. 4, December, 1928.

Zubiría y Campa, Luis.

1. La minería en el Estado de Durango [México]: *Soc. cient. "Antonio Alzate," Mem. y Rev.*, t. 38, no. 3-4, pp. 177-198, map, March, 1919.

Zuschlag, T. H.

1. (and Kock, W.) The results of an electro-magnetic survey at Ducktown, Tennessee: *Canadian Min. Jour.*, vol. 49, no. 32, pp. 636-638, 5 figs., August 10, 1928.

Anonymous.

1. Manganese ore in Georgia: *Science*, new ser., vol. 48, pp. 360-362, October 11, 1918.
2. Eminent living geologists; Charles Doolittle Walcott: *Geol. Mag.*, new ser., dec. 6, vol. 6, pp. 1-10, portr., January, 1919.
3. Mining copper at Kennecott, Alaska: *Min. and Sci. Press*, vol. 118, pp. 53-56, 3 figs., January 11, 1919.
4. Geology of Montreal River district of northern Ontario: *Eng. and Min. Jour.*, vol. 107, pp. 575-576, March 29, 1919.
5. The deepest well: *Min. and Sci. Press*, vol. 119, pp. 341-342, September 6, 1919.
6. Thirty million years ago; newly discovered pre-Cambrian sea wherein earth's first creatures were born: *Sci. Am.*, vol. 120, pp. 682-683, 698, 6 figs., June 28, 1919.
7. The Knee Lake district in northern Manitoba: *Min. and Sci. Press*, vol. 121, pp. 306-307, 1 fig., August 28, 1920.
8. Notes on Canadian minerals: *Toronto, Univ., Studies, Geol. ser.* no. 12, pp. 69-72, 1921.
9. Society of Economic Geologists holds meeting in Chicago [December 28-30, 1920]: *Eng. and Min. Jour.*, vol. 111, no. 2, pp. 65-67, January 8, 1921.
- 10 The oil fields in the Northwest Territory: *Canadian Inst. Min. and Met., Monthly Bull.* no. 105, pp. 15-16, January, 1921.

Anonymous—Continued.

11. Important oil fields in northern Canada: Am. Assoc. Petroleum Geologists, Bull., vol. 5, no. 1, pp. 85-87, January-February, 1921.
12. An eminent living American geologist and paleontologist—Professor John M. Clarke: Geol. Mag., vol. 58, pp. 292-294, portr., July, 1921.
13. Frederick Leslie Ransome: Eng. and Min. Jour., vol. 112, no. 3, pp. 99, portr., July 16, 1921.
14. Frank L. Hess: Eng. and Min. Jour-Press, vol. 113, no. 2, p. 57, portr., January 14, 1922.
15. James Furman Kemp: Eng. and Min. Jour-Press, vol. 113, no. 9, p. 367, portr., March 4, 1922.
16. Second annual meeting of the Mineralogical Society of America: Am. Mineralogist, vol. 7, no. 3, pp. 45-50, March, 1922.
17. Restorations figuring Miocene fishes: Natural History (Jour. Am. Mus. Nat. Hist.), vol. 22, no. 3, pp. 271-274, 10 figs., May-June, 1922.
18. Horace V. Winchell: Eng. and Min. Jour.-Press, vol. 113, no. 21, p. 926, portr., May 27, 1922.
19. An American anthropoid primate [*Hesperopithecus haroldcookii*, Nebraska]: Sci. Monthly, vol. 14, no. 6, pp. 588-590, 2 figs., June, 1922.
20. Magnesite in southern Nevada: Science, new ser., vol. 56, p. 69, July 21, 1922.
21. The Shenandoah Caverns, Virginia: Science, new ser., vol. 56, pp. 240-241, September 1, 1922.
22. The New England intercollegiate geological excursion: Science, new ser., vol. 56, pp. 442-443, October 20, 1922.
23. A forest under the City of Washington: Science, new ser., vol. 56, pp. 529-530, November 10, 1922.
24. Benjamin Leroy Miller: Eng. and Min. Jour.-Press, vol. 114, no. 25, p. 1060, portr., December 16, 1922.
25. Charles D. Walcott, president of the American Association for the Advancement of Science for the year 1923: Science, new ser., vol. 57, pp. 120-121, January 26, 1923.
26. The late Dr. J. D. Mackenzie, M. C.: Canadian Inst. Min. and Met. Monthly Bull., no. 129, pp. 65-67, portr., January, 1923.
27. Economic geologists meet at Ann Arbor [December, 1922]: Eng. and Min. Jour.-Press, vol. 115, no. 1, pp. 27-28, January 6, 1923.
28. Economic geologists hold annual technical meeting [in New York City, May 18 and 19, 1923]: Eng. and Min. Jour.-Press, vol. 115, no. 21, pp. 942-944, May 26, 1923.
29. Horace V. Winchell [obituary notice]: Eng. and Min. Jour.-Press, vol. 116, no. 5, p. 203, portr., August 4, 1923.
30. Petroleum possibilities in deep sands near Osage field, Wyoming: Eng. and Min. Jour.-Press, vol. 116, no. 9, p. 376, September 1, 1923.
31. Obituary, Professor Raphael Pumpelly: Am. Jour. Sci., 5th ser., vol. 6, pp. 375-376, October, 1923.
32. A prominent Canadian geologist, Willet G. Miller: Eng. and Min. Jour.-Press, vol. 116, no. 10, p. 664, portr., October 20, 1923.
33. Smoky River coal field [northwestern Alberta]: Canadian Min. Jour., vol. 45, no. 13, pp. 308-310, 2 figs., March 28, 1924.
34. Nova Scotia's mineral resources: Canadian Min. Jour., vol. 45, no. 14, pp. 328-331, April 4, 1924.

Anonymous—Continued.

35. Production of petroleum in 1923: *Am. Inst. Min. and Met. Eng.*, no. 1335, 264 pp., April, 1924.
36. Dr. Frank Dawson Adams: *Canadian Min. Jour.*, vol. 45, no. 21, pp. 493–494, portr., May 23, 1924.
37. Earthquake in northern California, January 22, 1923: *Seismol. Soc. America, Bull.*, vol. 14, no. 2, pp. 165–168, June, 1924.
38. Geologists of note: Hoyt Stoddard Gale: *Eng. and Min. Jour.-Press*, vol. 118, no. 16, p. 604, portr., October 18, 1924.
39. Oil and gas in northeastern Colorado: *Oil and Gas Jour.*, vol. 23, no. 23-A, pp. 46, 110–111, 1 fig., October 30, 1924.
40. Obituary, Edmund Otis Hovey: *Am. Jour. Sci.*, 5th ser., vol. 8, p. 445, November, 1924.
41. Oil and gas in northeastern Colorado; prospects of developing new fields: *Colorado School of Mines, Alumni Mag.*, vol. 14, no. 7, pp. 13–18, November, 1924.
42. Willet G. Miller: *Am. Inst. Min. and Met. Eng., Trans.*, vol. 71, pp. 1376–1377, 1925.
43. Investigators gradually unfold origin and present nature of coal: *Coal Age*, vol. 27, no. 9, pp. 319–323, 2 figs., February 26, 1925.
44. What makes coal coke?: *Coal Age*, vol. 27, no. 10, pp. 364–366, 1 fig., March 5, 1925.
45. Production of petroleum in 1924: *Am. Inst. Min. and Met. Eng.*, no. 1447, 247 pp., April, 1925.
46. Sierra Nevada earthquakes of March 20, 1925: *Seismological Soc. America, Bull.*, vol. 15, no. 2, pp. 140–142, June, 1925.
47. Jay Backus Woodworth: *Science*, new ser., vol. 62, p. 150, August 14, 1925.
48. Washington meeting of American Association for Advancement of Science: *Pan-Am. Geologist*, vol. 43, no. 5, pp. 363–380, June, vol. 44, no. 1, pp. 69–80, August, 1925.
49. Professor Jay Backus Woodworth: *Am. Jour. Sci.*, 5th ser., vol. 10, pp. 381–382, October, 1925.
50. Geological conference in western Texas: *Science*, new ser., vol. 62, p. 413, November 6, 1925.
51. Dinosaurs leave footprints in Utah coal mines: *Coal Age*, vol. 28, no. 22, 2 figs., November 26, 1925.
52. In memoriam, John Mason Clarke, 1857–1925: *New York State Mus Bull.*, no. 267, pp. 7–11, 1926.
53. The South Dakota badlands: *Black Hills Engineer*, vol. 14, no. 2, pp. 65–76, 13 figs., March, 1926.
54. Kansas City meeting [of Section E] of American Association [for the Advancement of Science]: *Pan-Am. Geologist*, vol. 45, no. 2, pp. 170–176, no. 3, pp. 247–256, March and April, 1926.
55. Petroleum development and technology in 1925: *Am. Inst. Min. and Met. Eng.*, no. 1570, 784 pp., April, 1926.
56. The first meeting of the eastern section of the Seismological Society of America: *Science*, new ser., vol. 63, p. 449, April 30, 1926.
57. Eleventh annual meeting of the American Association of Petroleum Geologists, Dallas, Texas, March 25–27, 1926: *Am. Assoc. Petroleum Geologists, Bull.*, vol. 10, no. 5, pp. 538–549, May, 1926.
58. Geologic map of a portion of western Texas and southeastern New Mexico: *Oil and Gas Jour.*, vol. 24, no. 52, p. 182, May 20, 1926.

Anonymous—Continued.

59. Eastern section of the Seismological Society of America: Seismological Soc. America, Bull., vol. 16, no. 2, pp. 150-159, June, 1926.
60. The St. Lawrence earthquake: Canadian Min. Jour., vol. 47, no. 33, pp. 801-802, August 13, 1926.
61. James Furman Kemp: Mining and Metallurgy, vol. 7, no. 239, p. 546, portr., December, 1926.
62. Henry Hollister Robinson, Ph. D.: Connecticut, State Geol. and Nat. Hist. Survey, Bull. no. 38, pp. 7-8, 1 pl. (portr.), 1927.
63. Charles D. Walcott: Mining and Metallurgy, vol. 8, no. 243, pp. 153-154, portr., March, 1927.
64. Twelfth annual meeting of the American Association of Petroleum Geologists, Tulsa, Oklahoma, March 24, 25, and 26, 1927: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 5, pp. 524-551, May, 1927.
65. Geologists of note; Arthur Philemon Coleman: Eng. and Min. Jour., vol. 123, no. 21, p. 836, portr., May 31, 1927.
66. Projects in petroleum research: Am. Assoc. Petroleum Geologists, Bull., vol. 11, no. 9, pp. 1003-1008, September, 1927.
67. The Kansas geological field conference: Science, new ser., vol. 66, pp. 275-276, September 23, 1927.
68. Fossils of Baffin Land: Science, new ser., vol. 66, pp. 473-474, November 18, 1927.
69. Climates of geologic past: Pan-Am. Geologist, vol. 49, no. 2, pp. 95-98, March, 1928.
70. Bibliography of published writings of Charles D. Walcott: Smithsonian Misc. Coll., vol. 80, no. 12, pp. 23-37, May 12, 1928.
71. The antiquity of man in America: Sci. Monthly, vol. 24, no. 5, pp. 477-479, May, 1927.
72. Gold deposits in Helena district, Montana [based on work by J. T. Pardee]: Min. Jour., Phoenix, Ariz., vol. 12, no. 2, pp. 13, 56-58, June 15, 1928.
73. Memorial of Alpheus Hyatt: Science, new ser., vol. 68, pp. 291-292, September 28, 1928.

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- Argonaut gold mine, Ontario: Knight, C. W., 6.

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- Courtland-Gleeson region: Wilson, E. D., 2.

- Jerome district, Yavapai County: Reber, 1.

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 Dakota fossils in Recent deposits: Reagan, 24.
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- Geological Survey activities: Branner, G. C., 2.
- Geological surveys: Branner, J. C., 1.
- State geologist's report, 1927: Branner, 5.

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- Batesville district: Miser, 8.
- Hot Springs district: Purdue, 1.

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Associations, meetings.

American Association for the Advancement of Science, Section E, proceedings:

Boston meeting, December, 1922: Moore, E. S., 5.

Cincinnati, 1923-24: Moore, E. S., 8; geology: Moore, E. S., 7.

Kansas City, December, 1925: Mansfield, G. R., 26; Anon., 54.

Nashville, December, 1927: Mansfield, G. R., 37.

Philadelphia, December, 1926: Mansfield, G. R., 32.

St. Louis, 1919: Chamberlin, T. C., 17.

Washington, 1924-25: Moore, E. S., 9; Anon., 48.

American Association of Petroleum Geologists, proceedings:

Dallas, Texas, 1926, eleventh annual meeting: Anon., 57.

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American Association of Petroleum Geologists, proceedings—Continued.

Denver, 1926: Hull, 15.

Los Angeles meeting: Rickard, 7.

San Francisco, thirteenth annual meeting; Donoghue, 4.

Shreveport, eighth annual meeting: Moore, R. C., 24.

Tulsa meeting, 1927: Anon., 64.

Wichita meeting, 1925: Moore, R. C., 28.

Fort Worth section meeting: Winton, W. M., 4.

Pacific section, San Francisco, 1925: Morse, R. R., 3.

Association of American State Geologists, Alabama meeting: Watson, T. L., 5.

meeting in October, 1925, in eastern Pennsylvania: Leighton, 16.

British Association for the Advancement of Science, Toronto meeting: Keyes, 169.

Cordilleran section of the Geological Society of America, proceedings: fifteenth to eighteenth meetings: Taff, 1, 2, 3.

nineteenth meeting, Pasadena: Louderback, 3.

twentieth, Berkeley: Rogers, A. F., 8.

twenty-first, Stanford University: Rogers, A. F., 14.

twenty-second, Berkeley: Buwalda, 6.

twenty-third, Stanford University: Buwalda, 9.

twenty-fourth, Berkeley: Buwalda, 10.

twenty-fifth, Berkeley: Buwalda, 14.

twenty-sixth, Los Angeles, January, 1927: Buwalda, 20.

Geological Society of America, proceedings:

Amherst, 34th meeting, 1921: Hovey, 4.

Ann Arbor, 35th, 1922: Berkey, 5.

Baltimore, 31st, 1918: Hovey, 1.

Boston, 32d, 1919: Hovey, 2.

Chicago, 33d, 1920: Hovey, 3.

Cleveland, 40th, 1927: Berkey, 16.

Ithaca, 37th, 1924: Berkey, 11.

Madison, 39th, 1926: Berkey, 15.

New Haven, 38th, 1925: Berkey, 12; Heald, 15.

Washington, 36th, 1923: Berkey, 8.

Kansas geological field conference: Anon., 67.

Mineralogical Society of America, organization: Rogers, A. F., 3; Whitlock, 5.

first annual meeting, Chicago, 1920: Whitlock, 11.

second annual meeting, Amherst, 1921: Whitlock, 12; Anon., 16.

third annual meeting, Ann Arbor: Van Horn, 1, 2.

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fourth annual meeting, Washington, 1923: Van Horn, 3.

fifth annual meeting, Ithaca, New York: Van Horn, 4, 5.

sixth annual meeting, New Haven, December, 1925: Van Horn, 8, 9.

seventh annual meeting, Madison, December, 1926: Van Horn, 10, 11.

eighth annual meeting, Cleveland, December, 1927: Van Horn, 12, 13.

Pacific coast section of the Paleontological Society, ninth annual meeting: Stock, 2.

tenth annual meeting: Stock, 6.

Paleontological Society, proceedings: tenth annual meeting, Baltimore, 1918: Bassler, 2.

eleventh, Boston, 1919: Bassler, 3.

twelfth, Chicago, 1920: Bassler, 4.

thirteenth, Amherst, 1921: Bassler, 7.

fourteenth, Ann Arbor, 1922: Bassler, 9.

fifteenth, Washington, 1923: Bassler, 12.

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seventeenth, New Haven, 1925: Bassler, 19.

eighteenth, Madison, 1926: Bassler, 21.

nineteenth, Cleveland, 1927: Bassler, 23.

Seismological Society of America, eastern section: Anon., 59.

Society of Economic Geologists, Proceedings, 1920–21: Penrose, 4.

first annual meeting, Amherst, 1921: Ball, S. H., 3.

first [organization] annual meeting, Chicago, 1920: Lewis, 5.

Chicago meeting, December, 1920: Anon., 9.

proceedings, 1921–22: Lindgren, 7.

Ann Arbor meeting: Anon., 27.

New York City, May, 1923: Anon., 28.

second annual meeting, Ann Arbor, 1922: Ball, S. H., 6.

Society of Economic Paleontologists and Mineralogists: Hanna, M. A., 6, 10.

Asteroidea.

Devonaster eucharis (Hall), six-rayed: Willard, B., 2.

Hudsonaster, Minnesota: Sardeson, 33.

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Macroporaster nylanderi, Silurian, Maine: Raymond, 11.

Starfishes, Decorah shale, Minnesota: Sardeson, 32.

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Athapapuskow Lake district, Manitoba: Bruce, 1.

- Atikokania: Rothpletz, 2.
- Atlantic and Gulf Coastal Plain, major geological features: Stephenson, 6.
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- Atlas of Colorado: Margerie, 2.
- Ausable quadrangle, New York: Kemp, 23.
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- Fossil eggs, Bermuda: Lewis, F. P., 1; Wood, C. A., 1.
- General: Wetmore, 10.
- Ilium in dinosaurs and birds: Romer, 1.
- Minerva saurodosis, Bridger formation, Wyoming: Wetmore, 2.
- Nebraska, Miocene: Wetmore, 7.
- Agate Springs, Miocene hawk: Wetmore, 9, 11.
- Miocene and Pliocene: Wetmore, 4.
- Sioux County: Wetmore, 13.
- Omorhamphus, Eocene, Wyoming: Sinclair, 11.
- Palaeospiza bella, Florissant: Wetmore, 6.
- Parapavo californicus, Rancho La Brea asphalt beds: Howard, H., 1.
- Porto Rico, cave deposits: Wetmore, 1, 3.
- Prehistoric ornithology: Wetmore, 14.
- Utah, Green River beds: Wetmore, 8.
- Axial and Monument Butte quadrangles, Moffat County, Colorado: Hancock, 7.
- Aztec mine, Baldy, New Mexico: Chase, C. A., 1.
- Bacteria, ancient: Moodie, 11, 16.
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- Coral limestones, minerals in: Harrison, J. B., 1.
- Physical geology.*
- Soils, genesis: Harrison, J. B., 2.
- Barbers Hill oil field, Chambers County, Texas: Bevier, 2.
- Barite: Allen, M. A., 1; Stose, 6.
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- Nova Scotia, Inverness County, Lake Ainslie district: Bell, W. A., 12.
- Ontario, Groundhog River area: Todd, E. W., 4.
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- Barite pisolites, Batson and Saratoga oil fields: Barton, 10.
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- Barkerville area, Cariboo district, British Columbia: Johnston, 22.
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- Laterally spreading theory: Chamberlin, R. T., 16.
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 Winnipegosis area: Johnston, W. A., 3.
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 Louisiana, Upper Cretaceous: Bramlette, 1.
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- Fossil eggs: Lewis, F. P., 1; Wood, C. A., 1.
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Physical geology.

- Changes of level: Sayles, 14.

Beryl crystal, Black Hills: Waldschmidt, 1.

Beryllium: Copaux, 1.

Bessemer-Vandiver folio, Alabama (no. 221): Butts, 13.

Bibliography.

- Alaska, petroleum: Martin, G. C., 8.
 Ammonite opercula: O'Connell, 5.
 Anguilla: Earle, 6.
 Antigua: Earle, 1.
 Arizona: Jenkins, 2.
 Ray-Miami region: Ransome, 1.
 Arkansas, diamond deposits: Mitchell, G. J., 8.
 Hot Springs district: Purdue, 1.
 Arthrodiures: Stensiö, 1.
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 Bailey, L. W., writings: Bailey, J. W., 1.
 Barrell, Joseph, writings: Gregory, H. E., 10; Schuchert, 7, 43.
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 Bell, Robert, writings: Ami, 1.
 Black Hills region: O'Harra, 3.
 Branner, J. C., writings: Penrose, 5, 6.
 Broadhead, G. C., writings: Keyes, 5.
 Brooks, A. H., writings: Smith, P. S., 9.
 Brush, G. J., writings: Dana, 3.
 California, coal: Boalich, 3.
 limestone deposits: Laizure, 1.
 southeastern: Brown, J. S., 3.
 Canada, Geological Survey publications: Ferrier, 1.
 Catalogue of bibliographies in geology, 1896-1920: Mathews, 5.
 Cement materials: Burchard, 19; Richardson, C. H., 13.
 Central America and West Indies: Vaughan, 13.
 Clark, W. B., writings: Clarke, J. M., 3.
 Clarke, J. M., writings: Schuchert, 30, 53.
 Chert and flint: Tarr, 15.
 Coal, Kentucky: Jillson, 14.
 Coarse sediments: Wentworth, 40.
 Clay deposits: Ries, 14.
 Colorado, Denver Basin: Johnson, J. H., 4.
 Golden area: Johnson, J. H., 13.
 Leadville mining district: Emmons, S. F., 1.
 maps, Johnson, J. H., 15.
 north-central: Johnson, J. H., 19
 foothills formation: Henderson, J., 2.
 northeastern: Johnson, J. H., 10
 Cretaceous: Henderson, J., 1.
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 southeastern: Johnson, J. H., 14.

Bibliography—Continued.

Colorado—Continued.

- southwestern: Johnson, J. H., 8.
 western, mineral deposits; Aurand, 2.
 Concretions: Kindle, 24.
 Cone-in-cone: Tarr, 11.
 Conodont and annelid jaw literature:
 Roundy, 2.
 Conodonts: Holmes, G. B., 1.
 Contact metamorphisms of basic igne-
 ous rocks: Schwartz, 7.
 Copper, Canada: Browning, C. P., 1.
 Coral Reefs: Davis, W. M., 35.
 Corundum: Cobb, M. C., 1.
 Costa Rica: Redfield, 7.
 Cox, G. H., writings: Dake, 9.
 Cretaceous-Eocene transition beds:
 Thom, 8.
 Crinoidea: Keyes, 273.
 Devonian, New York: Goldring, 4.
 Flexibilia: Springer, 2.
 Crosby, W. O., writings: Shimer, 8.
 Crustacea, Paleozoic: Vogdes, 1.
 Cryolite: Ladoo, 5.
 Crystal structure: Morse, J. K., 1.
 Cuba, carbonaceous materials: Ortega,
 P., 1.
 Cushing, H. P., writings: Kemp, 11.
 Daimonhelix: Mansfield, W. C., 4.
 Dana, J. D., writings: Pirsson, 3.
 Dikes, clastic: Williams, M. Y., 17.
 Dominican Republic: Vaughan, 16.
 Dumble, E. T., writings: Simonds, 1.
 Dumortierite: Grawe, 5.
 Eastman, C. R., writings: Dean, 2.
 Emerson, B. K., writings: Keyes, 30.
 Emerson, F. V., writings: Brigham, 2.
 Fire clay: Shaw, J. B., 1.
 Florida: Sellards, 6; human remains:
 Sellards, 2.
 Fluorspar deposits: Aurand, 1; La-
 doo, 5.
 Foraminifera: Cushman, 22, 41; Plum-
 mer, H. J., 1.
 General: Meisel, 1.
 Geologic literature on North America,
 1785–1918: Nickles, 2.
 Geophysical methods: Barton, 15.
 Geophysical principles applied to pros-
 pecting: Johnson, J. H., 17.
 Georgia: Cave, 1.
 Gilbert, G. K., writings: Mendenhall,
 W. C., 1.
 Glacial period divisions: Osborn, 19.
 Glass sands: Richardson, C. H., 4.
 Grand Canyon of the Colorado: Dar-
 ton, 3.
 Great Basin, Pleistocene history:
 Antevs, 12.
 Greenland: Böggild, 1, 6; Koch, 2;
 fossil plants: Seward, 4.
 Gulliver, F. P., writings: Davis, 10.
 Guppy, R. J. L., writings: Harris,
 G. D., 3.
 Gypsum: Stone, 11; Wilder, 2.
 Hague, Arnold, writings: Iddings, 1.
 Haiti: Woodring, 5.

Bibliography—Continued.

- Harrison, J. B., writings: Smith, S., 1.
 Hice, R. R., writings: Ashley, 19.
 Hilgard, E. W., writings: Slate, 1.
 Hills, R. C., writings: George, R. D., 4.
 Hitchcock, C. H., writings: Upham, 1.
 Holden, E. F., writings: Kraus, 7.
 Honduras: Redfield, 8.
 Horse, evolution: Matthew, 34.
 Hovey, E. O., writings: Kemp, 20.
 Human remains, Vero, Florida: Sel-
 lards, 2.
 Idaho: Campbell, S., 1, 2; phosphate
 reserve: Mansfield, G. R., 29.
 Igneous rocks: Benson, W. N., 2.
 Illinois: Ill. G. S., 2.
 Indiana, stratigraphy and paleontol-
 ogy: Cumings, 1.
 Iowa, Pleistocene: Cable, 4.
 Iron depositing bacteria: Harder, 1.
 Irving, J. D., writings: Kemp, 1.
 Isostasy: Knopf, 8.
 Jamaica: Matley, 2.
 Jillson, W. R., writings: Jillson, 22,
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 Julien, A. A., writings: Kemp, 5.
 Kansas, Cretaceous: Twenhofel, 17.
 Permian: Dunbar, 4.
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 Burroughs, W. G., 2.
 Kennedy, William, writings: Wrather,
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 Knowlton, F. H., writings: White, D.,
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 Labrador: Kindle, 25.
 Laccoliths: Gould, L. M., 2; Mac-
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 Lambe, L. M., writings: Kindle, 7.
 Lee, W. T., writings: Alden, 7.
 Libbey, William, writings: Darton,
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 Lizards, North America: Gilmore, 38.
 Louisiana, Five Islands: Vaughan,
 F. E., 2.
 McInnes, William, writings: Alcock,
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 Magnesite: Whitwell, 1.
 Mammoth Cave: Jillson, 41.
 Manganese: Harder, 2; Hewett, 3;
 Muilenburg, 1; Wheeler, H. L., 1.
 Manitoba: Wallace, 14.
 Manuscript bibliographies, list: Little,
 H. P., 3.
 Maryland, Cambrian and Ordovician:
 Bassler, R. S., 1.
 Kent County: Miller, B. L., 6.
 Queen Annes County: Miller, B. L., 7.
 Talbot County: Miller, B. L., 8.
 Mell, P. H., writings: Calhoun, 1.
 Mesozoic and Cenozoic plants, catalog:
 Knowlton, 2.
 Mesozoic Invertebrata: Whitney, F.
 L., 1.
 Mid-Continent oil fields: Merritt, J.
 W., 4.
 Miller, W. G., writings: Tyrrell, 8.

Bibliography—Continued.

- Mineral supplies, United States: McCaskey, 1.
 Minnesota: Gregory, W., 1.
 Mesabi iron range: Niemi, 1.
 Mississippi River, drainage problem: Schoewe, 6.
 Missouri, Devonian: Branson, 5.
 Molding sands: Richardson, C. H., 12.
 Montana, phosphate deposits: Condit, 5.
 Moses, A. J., writings: Luquer, 1.
 Newfoundland, central mineral belt: Snelgrove, 2.
 southeastern, Cambrian-Ordovician: Howell, 5.
 New Hampshire: Goldthwait, 6.
 New York, Allegany State Park: Lobeck, 8.
 Salt deposits: Alling, 14.
 Silurian faunas: Ruedemann, 19.
 Utica and Lorraine formations: Ruedemann, 16.
 Niagara Falls: Dow, 1.
 Niagaran coral reefs: Cumings, 4.
 North American geology: Nickles, 1-5.
 Norwood, C. J., writings: Foerste, 25.
 Oil shales: Alderson, 2; George, R. D., 2; Jillson, 25; Reeves, J. R., 5; Winchester, 5.
 Oregon: Dixon, 1; Smith, W. D., 1.
 John Day region: Jillson, 39.
 Packard, A. S., writings: Cockerell, 7.
 Paleontology, Pacific coast: Merriam, 7.
 Peat: Atwood, A. C., 1; Haanel, B. F., 1.
 Peck, F. B., writings: Shimer, 5.
 Pennsylvania, mineralogy: Gordon, S. G., 6.
 Piedmont region: Smith, I. F., 3.
 Permian: Schuchert, 52.
 Great Plains: Gould, C. N., 14.
 Petroleum: Burroughs, 1-5; Hoyt, 1.
 Mexico: Mexico, Dept. Petrol., 1.
 Phosphates: Mansfield, G. R., 21, 25.
 Platinum group of metals: Howe, J. L., 1.
 Pleistocene life: Baker, F. C., 1.
 Porto Rico, Lares district: Hubbard, B., 3.
 Ponce district: Mitchell, 7.
 Potash: Gale, 631; Hicks, 1, 2; Mansfield, G. R., 17, 20, 24.
 Postglacial uplift of southern New England: Fairchild, 7.
 Pre-Cambrian, northern Quebec: Cooke, H. C., 2.
 Pre-Cambrian literature: Steidtmann, 2, 3.
 Prest, W. H., writings: Piers, 1.
 Pumpelly, Raphael, writings: Willis, 19.
 Purdue, A. H., writings: Ashley, 3.
 Quebec: Clark, T. H., 11.
 Mount Albert area: Alcock, 20.
 Quicksilver: Evans, I. P., 1, 2; Ross, C. P., 4.
 Mexico: Segura, 1.
 Ripple marks: Bucher, 1; Kindle, 28.
 Robinson, H. H., writings: Anon., 62.

Bibliography—Continued.

- Rogers, G. S., writings: Kemp, 6.
 Rudistids: Palmer, R. H., 7.
 St. John, O. H., writings: Keyes, 45.
 St. Kitts-Nevis: Earle, 6.
 Salt: Phalen, 1.
 Scudder, S. H., writings: Mayor, 1.
 Seismology: Hodgson, 16; Seism. Soc. Am., 1.
 Mexico: Muñoz Lumbier, 1.
 Shale oil: McKee, 1.
 Silurian, Indiana: Cummings, 5.
 Smith, E. A., writings: Butts, 14.
 Smock, J. C., writings: Kümmel, 6.
 South Dakota, central Black Hills: Darton, 14.
 Spencer, J. W. W., writings: Shaw, E. W., 10.
 Springer, Frank, writings: Schuchert, 46; Springer, 12.
 Stevenson, J. J., writings: White, I. C., 7.
 Stylolites, nature and origin: Stockdale, 1.
 Tennessee, Ducktown district: Emmons, W. H., 8.
 Tertiary, Oregon and Washington: Hertlein, 3.
 Texas, Fredericksburg and Washita formations: Adkins, 1.
 McLennan County: Adkins, 2.
 north central: Beede, 11.
 northeastern: Fohs, 2.
 Weno and Pawpaw formations: Adkins, 2.
 Todd, J. E., writings: Keyes, 102; Leverett, 12.
 Triassic: Roberts, J. K., 8; Smith, J. P., 3.
 Triconodonts: Simpson, G. G., 1.
 Trilobites: Raymond, 8.
 Iowa: Walter, 3.
 Trinucleidae: Stetson, 2.
 Tungsten, United States: Hess, 2.
 Twitchell, M. W., writings: Kümmel, 8.
 Uglow, W. L., writings: Baker, M. B., 4; Williams, M. Y., 18.
 U. S. Geological Survey: Inst. Govt. Research, 1.
 Utah, hydrocarbons: Clark, A. F. 1.
 ore deposits: Butler, 4.
 Van Hise, C. R., writings: Chamberlin, T. C., 6; Leith, 3.
 Virgin Islands: Meyerhoff, 1.
 Vogdes, A. W., writings: Dumble, 5; Keyes, 158.
 Wadsworth, M. E., writings: Lane, 17.
 Walcott, C. D., writings: Darton, 23; Anon., 2, 70.
 Washington, mineral resources: Fischer, 1.
 Stevens County: Weaver, 2.
 San Juan Islands: McLellan, 2.
 Watson, T. L., writings: Ries, 12.
 Weller, Stuart, writings: Chamberlin, T. C., 39.
 Wells, H. L., writings: Chittenden, 1.

Bibliography—Continued.

- White, I. C., writings: Fairchild, 23; Hennen, 2.
 Williams, H. S., writings: Cleland, 1.
 Williston, S. W., writings: Lull, 14.
 Winchell, H. V., writings: Kemp, 17; Keyes, 136.
 Woodward, R. S., writings: Wright, F. E., 8.
 Woodworth, J. B., writings: Keith, 3.
 Wright, G. F., writings: Upham, 3.
 Big Hill salt dome, Jefferson County, Texas: Henley, 1.
 Big Hill salt dome, Matagorda County, Texas: Wolf, 5.
 Big Lake oil field, Reagan County, Texas: Sellards, 21.
 Big Thompson River valley, Colorado, physiographic development: Fuller, M. B., 1.
 Bindheimite as an ore mineral: Shannon, 7.
 Biography.
 Adams, F. D.: Anon., 36.
 Agassiz, Louis: Keyes, 211; Warren, H. A., 1.
 Bailey, L. W.: Bailey, J. W., 1.
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 Kemp, J. F.: Berkey, 14; G., 1; Geijer, 4; Keyes, 250; Knappen, 2; Lindgren, 20; Peele, 1; Reeds, 13; Rickard, 12; Schuchert, 33; Anon., 15, 61.
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 Little, George: Little, G., 1.
 Lucas, A. F.: Goodrich, 2; McBeth, 1.
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 Curtisite, Sonoma County : Wright, F. E., 9.
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 Foshagite, Crestmore : Eakle, 6.
 Furnace Creek, Death Valley : Foshag, 17.
 Hydroboracite, Inyo County : Schaller, 16.
 Hydromagnesite, crystallography : Rogers, A. F., 15.
 Ilsemannite, Shasta County : Cook, C. W., 1.
 Jurupaite, Crestmore : Eakle, 3.
 Kempite, Santa Clara County : Rogers, A. F., 18, 22.
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- Wulfenite, Lavic : Guild, 3.
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- Algae, Miocene, Los Angeles : Gardner, N. L., 1.
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 Santa Ana Mountains : Packard, 4.
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- Fossil fishes : Hubbs, 1.
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- Physeteroid cetacean, Santa Barbara County : Kellogg, R., 9.
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 Pleistocene fossils, Carpinteria asphalt pit : Hoffman, R., 1; Stock, 20.
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 San Pedro fauna, Nob Hill cut, San Pedro : Oldroyd, T. S., 3.
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- Tertiary diatoms: Hanna, G. D., 31.
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 Whale, Monterey group: Hanna, G. D., 15.
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- Anorthosite, Los Angeles County: Miller, W. J., 34.
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- Anticlinorium, southern coast: Warner, T., 1.
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- Earthquake rifts, aerial observation: Willis, 7.
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 Corralitos, September 19, 1923: Macelwane, 4.
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 Evergreen, July 19, 1925 and May 28, 1927: Byerly, 15.
 Inglewood, June 21, 1920: Taber, 3; geologic evidence: Kew, 5.
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 Los Angeles, July, 1920: Taber, 5.
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- Lassen Peak Observatory: Finch, R.
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- McKittrick oil field, structure: Eng-
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- Offsets along Haywards fault: Russell,
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- Pico formation, sedimentation: Cart-
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- Puente Hills region: English, W. A.,
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- Rifts of southern California: Davis,
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- Samwel Cave, Shasta County, Merriam,
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- San Andreas rift, southern California:
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- Salton Basin, fault features: Brown,
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- San Francisco Bay sediments: Louder-
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- San Joaquin Valley, east side, struc-
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- Sandstone dike, Orange County, gene-
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- Solifluxion, Coast Ranges: Legraye, 1.
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 - "The Geysers," Sonoma County: Allen,
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 - Valle Grande: Clark, B. L., 19.
 - Variation of temperature with geologic
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 - Warner Range: Russell, R. J., 6.
 - Wind action in San Joaquin and Sali-
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- Alluvial fans, Cucamonga district:
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 - Bakersfield fault scarp: Gilbert, G. K.,
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 - Classification and nomenclature of
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 - Coast ranges: Willis, 2.
 - Cockscomb Crest, Yosemite: Matthes, 2.
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 - Continental shelf off the coast: Law-
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 - Evolution Basin, Sierra Nevada: Mat-
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 - Glacial stages, Sierra Nevada: Matthes,
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 - Glaciation, San Gabriel Mountains:
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 - Hanging side valleys, Yosemite Valley,
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 - Kern Canyon, glaciation: Hills, T.
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 - Kings River Canyon and Yosemite Val-
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 - Landslide lakes: Russell, R. J., 4.
 - Lassen Peak region: Loomis, B. F., 1;
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 - Los Angeles coastal belt: Vickery, 5.
 - Moraines of Convict Lake glaciers:
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 - Piracy and persistence of antecedent
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- Rifts of southern California: Hill, R. T., 2.
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 Santa Clara Valley: Clark, W. O., 2.
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- Acadia: Bailey, L. W., 2.
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- Arctic regions, Ellesmere Land: Holte-dahl, 1.
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southeastern Colorado: Johnson, J. H., 14.

southwestern Colorado: Johnson, J. H., 8.

Cooperative surveying: Mendenhall, 3.

Geology and natural resources: George, R. D., 6.

Geology of the Denver Basin, bibliography: Johnson, J. H., 4.

Guidebook, Denver & Rio Grande Western route: Campbell, M. R., 3.

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Peace River canyon area: McLearn, 7.

Prince Rupert to Burns Lake: Hanson, 10.

Skeena River to Stewart: Hanson, 6.

southwestern: Cairnes, 2.

Taseko Lake-French Bar Creek: MacKenzie, J. D., 2.

upper Peace River region: McLearn, 6.

Vancouver Island: Dolmage, 5; MacKenzie, J. D., 5; Barkley Sound: Dolmage, 2.

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Puente Hills region: English, W. A., 3.

Sacramento Valley: Bryan, 10.

San Benito County: Kerr, P. F., 4.

San Diego County: Ellis, A. J., 1.

Santa Barbara County, Santa Ynez River district: Kew, 2; Nelson, R. N., 1.

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- Grand, Jackson, and Larimer counties (parts): Spock, 1.
- La Junta area: Patton, H. B., 3.
- Larimer County, Fox Hills sandstone: Johnson, J. H., 20.
- Las Animas, Otero, and Bent counties (parts): Duce, 1.
- Mancos district: Collier, 3.
- Moffat County: Sears, 3.
- Morrison formation: Lee, W. T., 1.
- north central, foothills formations: Henderson, 2.
- northeastern: Henderson, J., 1; Mather, 12.
- Routt and Moffatt counties: Perini, 1.
- Routt County: Crawford, R. D., 1.
- San Juan Basin: Reeside, 8.
- southeastern: Coffin, 4; Carlile shale and Timpas limestone, merging: Patton, H. B., 2.
- southwestern: Coffin, 3; Forrester, J. B., 1.
- Tarryall district: Muilenburg, 2.
- Twin Lakes district: Howell, J. V., 1.
- Weld County, Laramie formation: Toepelman, 4.
- Comanche series: Stanton, 14.
- Comanche succession, taxonomic rank: Stanton, 7.
- Correlation: Berry, 23.
 - Cretaceous, Upper: Stanton, 2.
 - Great Plains region: Twenhofel, 6.
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- Greenland: Böggild, 1.
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- Gulf Coastal Plain: Brantly, 2; Shaw, 4; Spooner, 3; Stephenson, 14.
- Haiti: Woodring, 5.
- Idaho, Bingham, Bonneville, and Caribou counties: Kirkham, 3.
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- Kansas: Moore, R. C., 4; Snider, 1; Stanton, 8; Twenhofel, 5, 17.
 - central, Comanchean: Twenhofel, 24.
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 - Russell County: Rubey, 3.
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- Manitoba: Ells, 2; Wallace, 14.
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- Lower California: Darton, 10; Mar-
land Oil Co., 1.
- Lower Cretaceous: Burckhardt, 2.
- northeastern: Böse, 5.
- northern: Böse, 8; Hill, R. T., 5;
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- Panuco oil field: Baker, C. L., 8.
- Panuco River valley: Trager, 5.
- San Felipe formation: Stanton, 4.
- southern: Ver Wiebe, 2.
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- central: Bowen, C. F., 2; Reeves,
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- Fergus County: Freeman, O. W., 1;
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- Garfield County: Bauer, 6; Thom, 3.
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- Soap Creek oil field: Thom, 1.
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- New Mexico: Darton, 11, 26; Keyes,
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- Gallup-Zuni Basin: Sears, 6.
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- Pecos Valley: Semmes, 4.
- Puertecito district: Wells, E. H., 2.
- Raton coal field: Lee, 10.
- Raton-Brilliant-Koehler area: Lee,
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- San Juan County: Bauer, C. M., 1;
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- North America, southern: Stanton, 1.
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- northwestern: Clifton, 1; Coman-
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- southeastern: Honess, C. W., 6;
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- Ontario, northern: Keele, 3, 4.
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- Eastend area: McLearn, 16.
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- South Dakota, Badlands: Ward, 8.
- Black Hills: Keyes, 31; O'Harra, 4; central: Darton, 14.
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- Ragged Butte area, Dewey County: Wilson, R. A., 7.
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- Ziebach County: Russell, W. L., 4, 6; Wilson, R. A., 3.
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- Diablo Plateau: Beede, 3.
- eastern: Dumble, 1; Renick, 12.
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- Fredericksburg and Washita formations: Adkins, 1.
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- Lacasa area, Ranger district: Ross, C. S., 3.

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- Lower Cretaceous: Bullard, 4.
- Luling oil field, Caldwell County: Sellards, 19.
- McLennan County: Adkins, 2; Pace, 1.
- Malone formation: Kitchin, 1.
- Medina County: Liddle, 3.
- northeastern: Ellisor, 2; Fohs, 2; (part): Hopkins, O. B., 2.
- Panola County: Sellards, 15.
- Ranger oil field: Reeves, F., 2.
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- Taylor and Navarro formations: Dane, 1.
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- Tom Green County: Henderson, G. G., 1.
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- Woodbine sand, Texas: Berry, 36; age: Scott, G., 3.
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- Bell Springs district, Carbon County: Dobbin, 5.

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 southern and central: Slipper, 1.
 southwestern: Stewart, J. S., 1.
 Alberta and British Columbia, foothills belt: Hopkins, O. B., 4.
 Appalachians, southern: Adams, G. I., 5.
 Arizona, Aravaipa-Stanley region: Ross, C. P., 5.
 Bright Angel quadrangle: Noble, 1.
 Courtland-Gleeson region: Wilson, E. D., 2.
 Jerome district, Yavapai County: Reber, 1; Smith, A. H. D., 1.
 lower Gila region: Ross, C. P., 1.
 northeastern, Holbrook area: Hager, D., 3.
 Papago country: Bryan, 7, 15.
 Payson district: Lausen, 1.
 Ray quadrangle: Ransome, 11.
 Ray-Miami region: Ransome, 1.

Geologic history—Continued.

Arizona—Continued.

Saddle Mountain and Banner mining district: Ross, C. P., 6.

San Carlos Indian Reservation: Schwennesen, 1.

Arkansas Hot Springs district: Purdue, 1.

Atlantic and Gulf Coastal Plain: Stephenson, 6.

Black Hills uplift: O'Harra, 5.

British Columbia: Brock, 4; Schofield, 15.

Ainsworth district: Schofield, 4.

Bridge River area: McCann, 3.

Cariboo district, Barkerville area: Johnston, W. A., 22.

Coquihalla area: Cairnes, 4.

Cordillera: Brock, 13.

Fraser River canyon: Camsell, 9.

Fraser River Delta: Johnston, W. A., 17.

Harrison Lake district: Crickmay, 5.

Kamloops district, North Thompson valley: Uglow, 3.

North Thompson Valley: Uglow, 11.

Purcell trench: Schofield, 6.

Rocky Mountain region: Schofield, 8.

Salmon River district: Schofield, 11.

Vancouver area: Schofield, 17.

California, Berkeley Hills: Fox, 1.

La Jolla quadrangle: Hanna, M. A., 3.

Los Angeles County, Baldwin Hills: Tieje, 6.

Paso Robles Basin: Reed, 6.

Petaluma, Point Reyes, and Santa Rosa quadrangles: Dickerson, 2.

Point Sur quadrangle: Trask, 5.

Randsburg quadrangle: Hulin, 3. --

Salton Sea region: Brown, J. S., 3.

San Andreas rift: Noble, 9.

San Bernardino Mountains: Vaughan, F. E. 1.

San Diego County: Ellis, A. J., 1.

San Gabriel Mountains: Miller, W. J., 33.

Santa Barbara County, upper Santa Ynez River basin: Nelson, R. N., 1.

southern: Hill, R. T., 8.

Warner Range: Russell, R. J., 6.

Wheeler Ridge area, Kern County: Hoots, 5.

Canada: Collins, 10.

Great Plains: Hume, 25.

maritime provinces: Bell, W. A., 13.

Canadian Cordilleras: Dowling, 16.

Canadian Rockies: Burwash, 2, 3.

Canadian shield: Collins, W. H., 22.

Caribbean region: Vaughan, 3; Woodring, 23.

Cayman Islands: Matley, 14.

Central America: Sapper, 7; Vaughan, 3; and West Indies: Vaughan, 13.

Colorado, Big Thompson River valley: Fuller, M. B., 8.

central: Crawford, R. D., 2.

Geologic history—Continued.

Colorado—Continued.

Front Range: Van Tyul, 5.

Golden area: Johnson, J. H., 13.

Las Animas, Otero, and Bent counties (parts): Duce, 1.

Leadville mining district: Emmons S. F., 1.

north central, foothills formations: Henderson, 2.

northwestern: Sears, 5.

San Juan Basin: Reeside, 8.

Tarryall district: Muilenburg, 2.

Twin Lakes district: Howell, J. V., 1.

Colorado Plateau region: Willis, 9.

Connecticut: Gregory, H. E., 8.

Southington-Granby area: Palmer, H. S., 5.

Cordillera in Canada: Schofield, 13.

Cordilleran region: Beeson, 1.

Cretaceous, Oklahoma and Arkansas: Miser, 27.

Utah: Spieker, 5.

Crustal deformation: Schuchert, 13.

Delaware, Wilmington quadrangle: Bascom, 2.

Dominican Republic: Vaughan, 16.

Eocene, southeastern North America: Berry, 51.

Finger Lakes: Fairchild, 20.

Florida: Cushman, 4.

General: Bretz, 12; Keith, 8; Merriam, 5.

Georgia, Cartersville district: Hull, 1.

Macon area: Cooke, C. W., 5.

Grand Canyon of the Colorado: Darton, 3.

Great Basin, Pleistocene history: Antevs, 5, 12.

Green River formation: Bradley, W. H., 3, 4.

Greenland: Böggild, 1, 6.

Gulf Coastal Plain: Stephenson, 12, 14.

Hawaii, Mauna Loa and Kilauea: Stearns, 8.

Idaho, Boise Basin: Ballard, 3.

Buffalo Hump district: Beckwith, 4.

Fort Hall Indian Reservation: Mansfield, G. R., 3.

Idaho batholith region: Beckwith, R. H., 1.

Mud Lake area: Stearns, 9.

Owyhee County, Bruneau River basin: Piper, 2.

St. Maries region: Anderson, A. L., 4.

Salmon River Mountains: Ross, C. P., 13.

Silver City district: Piper, 7.

southeastern: Mansfield, G. R., 11, 29.

Illinois: Cady, 6.

Carbondale quadrangle: Lamar, 3.

Carlyle-Centralia district: Shaw, 9.

Colchester and Macomb quadrangles: Hinds, H., 1.

Geologic history—Continued.

Illinois—Continued.

- Dixon quadrangle: Knappen, 1.
 east-central: Mylius, 7.
 Edgington-Milan area: Savage, 5.
 Elgin region, glacial history: Leighton, 14.
 Gillespie and Mount Olive quadrangles: Lee, W., 1.
 Glenwood beds: Bevan, 6.
 Hennepin quadrangle: Cady, 3.
 Herscher quadrangle: Athy, 1.
 Joliet quadrangle: Fisher, D. J., 2.
 Kings quadrangle: Bretz, 4.
 La Harpe and Good Hope quadrangles: Savage, 8.
 La Salle anticline: Mylius, 5.
 La Salle quadrangle: Cady, 3.
 Morris quadrangle: Culver, 2.
 New Athens-Okawville area: Shaw, 8.
 southern: Weller, 11, 15; Carboniferous: Weller, 11.
 Indiana, Greene County, eastern: Malott, 1.
 Iowa, Lake Calvin region: Schoewe, 6.
 Lucas County: Lugn, 6.
 Mississippian: Van Tuyl, 8.
 Kansas: Wooster, 2.
 Cretaceous: Twenhofel, 17.
 Hamilton County: Bass, 2.
 Nemaha granite ridge: Moore, R. C., 32.
 southeastern: Ley, 2.
 Syracuse and Lakin quadrangles: Darton, 2.
 western: Twenhofel, 6.
 Kentucky, Berea region: Burroughs, W. G., 5.
 Edmonson County: Weller, J. M., 1.
 Knob region: Burroughs, W. G., 4.
 Morgan County: Robinson, L. C., 1.
 western coal field: Burroughs, W. G., 2.
 Kilauea: Stone, J. B., 1.
 Lake Erie region: Decker, C. E., 1.
 Lake Lahontan: Jones, J. C., 2.
 Lake Superior geosyncline, Hotchkiss, 8.
 Lanai: Wentworth, 15.
 Lesser Antilles: Earle, 8, 11.
 Louisiana, Sabine uplift: Powers, 2.
 Lower Cretaceous, Oklahoma and Texas: Bullard, 4.
 Mackenzie River basin: Dowling, 15, 17.
 Manitoba, Flinflon area: Alcock, 15.
 northern: Bruce, 5.
 pre-Cambrian: Alcock, 19.
 Rice Lake and Oiseau River areas: Cooke, H. C., 9.
 Maryland, Elkton quadrangle: Bascom, 2.
 Kent County: Miller, B. L., 6.
 Queen Annes County: Miller, B. L., 7.
 Talbot County: Miller, B. L., 8.
 Massachusetts, Boston area: Crosby, I. B., 5.
 central, glacial history: Alden, 2.

Geologic history—Continued.

- Connecticut Valley: Miller, W. J., 10.
 Essex County: Clapp, C. H., 1.
 Mesozoic, Alaska: Martin, G. C., 15.
 southern North America: Stanton, 1.
 Mesozoic floras of North and South America: Knowlton, 1.
 Mexico: Lewis, S. J., 1.
 Chapala region: Palmer, R. H., 1.
 Cordillera: Fletcher, 1.
 El Oro and Talpujahu districts: Flores, 1.
 Hidalgo-Vera Cruz region: Palmer, R. H., 4.
 Panuco oil field: Baker, C. L., 8.
 Panuco River valley: Trager, 5.
 Michigan, pre-Cambrian: Allen, R. C., 2.
 Mid-Continent oil fields: Bosworth, 1; McCoy, 5.
 Minnesota: Grout, 2; Meinzer, 11.
 Herman, Barrett, Chokio, and Morris quadrangles: Sardeson, 1.
 St. Louis County, northern: Grout, 20.
 Mississippi Gulf, Eocene: Berry, 58.
 Mississippi Valley, Missouri and Illinois: Krey, 2.
 Pleistocene: Leverett, 8.
 upper, late Paleozoic: Van Tuyl, 1.
 Missouri, Ste. Genevieve County: Weller, 19.
 Vernon County: Greene, 8.
 Missouri River: Greene, 2.
 Montana, Bearpaw Mountains: Reeves, F., 7.
 Beartooth Mountains, Bevan, 2.
 central, Upper Cretaceous: Bowen, C. F., 2.
 Cretaceous: Hammer, 1.
 Fergus County: Freeman, O. W., 1.
 front ranges, Cenozoic history: Bevan, 9.
 Quadrant formation: Hammer, 2.
 Sweet Grass Hills: Kemp, 8.
 Tullock Creek coal field: Rogers, G. S., 8.
 Upper Cretaceous: Robinson, E. G., 1.
 Nevada, Manhattan district: Ferguson, H. G., 5.
 Muddy Mountains: Longwell, 1, 15.
 Pioche district: Westgate, 6.
 Rochester district: Knopf, A., 7.
 Santa Fé district, Mineral County: Clark, C. W., 2.
 New Brunswick, Moncton area: Wright, W. J., 2.
 New Hampshire, White Mountains, North Conway quadrangle: Billings, 5.
 New Mexico, Mogollon district: Ferguson, H. G., 3.
 Raton-Brilliant-Koehler area: Lee, W. T., 6.
 Sandia Mountains: Ellis, R. W., 2.
 San Juan Basin: Reeside, 8.

Geologic history—Continued.

New Mexico—Continued.

Taos Range: Gruner, 1.

Tyrone district: Paige, 2.

New York: Miller, W. J., 23.

Adirondacks: Miller, W. J., 8; western: Agar, 1.

Canton quadrangle: Chadwick, 5.

Catskill region: Berkey, 6.

Genesee country: Fairchild, 15.

Genesee River region: Fairchild, 6.

Lake Clear region: Alling, H. L., 1.

Lake Placid quadrangle: Miller, W. J., 1.

Lyon Mountain quadrangle: Miller, W. J., 26.

Newburgh quadrangle: Holzwasser, 1. physiographic history: Fairchild, 16.

Pleistocene: Fairchild, 9.

Schroon Lake quadrangle: Miller, W. J., 2.

Rochester, Pinnacle Hills, glacial history: Fairchild, 13.

West Point quadrangle: Berkey, 3.

North Atlantic Ocean, Tertiary history: Woodring, 8.

North Carolina: Bryson, 3.

Cretaceous: Stephenson, 4.

Nova Scotia, Northumberland Strait: Bell, W. A., 10.

Oahu: Wentworth, 22.

Ohio, Camp Sherman quadrangle: Hyde, 1.

Delaware County: Westgate, 5.

Oklahoma: Redfield, J. S., 1.

Arbuckle Mountains: Weidman, 3.

Beckham County: Gouin, 2.

Caddo and Grady counties: Becker, 1.

Carboniferous: Powers, 26.

Cimarron County: Rothrock, 4.

Crinerville oil field, Carter County: Powers, 22.

Kay, Grant, Garfield, and Noble counties: Clark, G. C., 3.

Rogers County: Woodruff, 4.

southern: Moore, R. C., 10.

southern Ouachita Mountains: Honess, C. W., 4.

Stonewall quadrangle: Morgan, G. D., 5, 6.

Thomas oil field, Kay County: Clark, S. K., 1.

Ontario, Arnprior-Quyon area: Wilson, M. E., 10.

Brocktown - Mallorytown area: Wright, J. F., 2.

English River valley: Bruce, 11.

Lake St. Joseph area: Bruce, 8.

Lake Timiskaming area: Hume, 14. northeastern, physiographic history: Collins, W. H., 4.

Red Lake area, District of Patricia: Bruce, 12.

Red Lake Basin, District of Kenora: Bruce, 22.

Geologic history—Continued.

Ontario—Continued.

Sudbury district, Grassy River area: Gledhill, 5.

Sutton Lake area: Hawley, J. E., 1.

Timiskaming district, Redstone River area: Bruce, 19.

Ontario-Manitoba boundary: Burwash, 6.

Ordovician, Mississippi Valley: Dake, 8.

Oregon: Buwalda, 12; Smith, W. D., 9.

Cascade Plateau: Hodge, E. T., 5.

Mount Jefferson: Hodge, E. T., 6.

South Dakota, Keystone region: Landes, K. K., 6.

Lead area: Hosted, 1.

Newell quadrangle: Darton, 1.

Tennessee, Ducktown district: Emmons, W. H., 9.

Rutherford County: Galloway, J. J., 1.

western valley: Dunbar, 1.

Texas, Carboniferous: Powers, 26.

central: Matteson, 1.

Dallas County: Shuler, 1.

eastern: Dumble, 1.

Gulf Coastal Plain: Powers, 13.

Hockley salt dome, Harris County: Deussen, 2.

Lacasa area, Ranger district: Ross, C. S., 3.

north central: Plummer, 4; Pennsylvanian: Moore, R. C., 13.

Stratton Ridge salt dome: Applin, P. L., 1.

Tarrant County: Hill, E. A., 1.

trans-Pecos Texas: Baker, C. L., 6.

western: Baker, C. L., 2.

Triassic, southern Connecticut: Russell, W. L., 1.

Trinidad: Milner, 1; Waring, 6.

Naparima region: Illing, 1.

Uinta Mountains: Sears, 3.

Upper Cretaceous Mississippi Gulf: Berry, 10.

Utah: Schneider, H., 1.

Moab region: Baker, A. A., 1.

Tintic district: Lindgren, 2.

Wasatch Plateau: Spieker, 3.

Weber County: Pack, F. J., 2.

Vermont, Barre: Perkins, G. H., 4.

Bristol, Lincoln, and Warren townships: Gordon, C. E., 6.

central: Richardson, C. H., 1.

Green Mountain front: Bain, 24.

Northfield: Richardson, C. H., 2.

Pleistocene history: Fairchild, 2.

Oregon: Smith, W. D., 1.

Pleistocene: McCornack, 1.

Riddle quadrangle: Diller, 12.

southeastern: Smith, W. D., 14.

western: Harrison and Eaton, 1.

Oriskany formation: Fettke, 1.

Pacific region of Canada: Bročk, 4.

Paleozoic, Atlantic-Arctic region: Holtedahl, 2.

Pebbles: Wentworth, 4.

Geologic history—Continued.

- Pennsylvania, Cambrian and Ordovician: Miller, B. L., 11.
 Piedmont region: Smith, I. F., 3.
 Permian: Schuchert, 52; Great Plains: Dunbar, 4.
 Piedmont area, Maryland and Pennsylvania: Stose, 18.
 Porto Rico: Berkey, 1.
 Coamo-Guayama district: Hodge, E. T., 1.
 Humacao district: Fettke, 5.
 Lares district: Hubbard, B., 3.
 Ponce district: Mitchell, 7.
 Pottsville formation: Fettke, 1.
 Quebec, Arnprior-Quyon area: Wilson, M. E., 10.
 Coleraine area: Knox, J. K., 1.
 Gaspé Peninsula: Coleman, 7.
 Mount Albert area: Alcock, 6.
 northern: Cooke, H. C., 2.
 Percé: Clarke, J. M., 20.
 Port Daniel-Gascons area: Schuchert, 29.
 St. Urbain area, Charlevoix district: Mawdsley, 1.
 Timiskaming County, Opatatika area: Cooke, H. C., 10.
 Rocky Mountains: Keyes, 16, 132, 162.
 South Dakota, Black Hills region: Fillman, 3; O'Harra, 3; Yates, 1; central: Darton, 14.
 Vermont, Whitingham area: Hubbard, G. D., 4.
 Vermont region: Keith, 1.
 Virgin Islands: Vaughan, 8.
 Virginia, Giles County: Hubbard, G. D., 6.
 Washington: Weaver, 1.
 northeastern: Jenkins, 9.
 San Juan Islands: McLellan, 2.
 Spokane area: Pardee, 12.
 Stevens County: Weaver, 2.
 West Indies: Matthew, 5; Vaughan, 10; (part): Vaughan, 22.
 West Virginia, Hampshire and Hardy counties: Tilton, 15.
 Mercer, Monroe, and Summers counties: Reger, 9.
 Mineral and Grant counties: Reger, 7.
 White River beds, South Dakota: Wanless, 3.
 Wisconsin River, Pleistocene: MacClintock, 1.
 Wyoming, Big Horn Basin: Hewitt, 16.
 southern: Sears, 5.
 Yukon, southern: Cockfield, 9.

Geologic mapping, western United States: Vaughan, 12.

Geologic maps.

- Alabama: Smith, E. A., 2, 5; (part): Brantley, 1.
 Ashland graphite area: Brown, J. S., 6.
 Bessemer-Vandiver quadrangle: Butts, 13.

Geologic maps—Continued.

Alabama—Continued.

- Clay County: Prouty, 10.
 northern: Semmes, 3.

Alaska, Alaska Peninsula: Martin, G. C., 8.

- Alaska Railroad region: Capps, 6.
 Anvik-Andreafski region: Harrington, 1.

- Canyon Creek: Overbeck, 2.
 Chandalar district: Mertie, 12.

- Chichagof Island, west coast: Buddington, 8; Overbeck, 1.

- Chignik region: Martin, G. C., 13.

- Chulitna region: Capps, 6; upper: Capps, 4.

- Cold Bay district: Capps, 5.

- Cold Bay oil field: Martin, G. C., 8.

- Cold Bay-Chignik district: Smith, W. R., 1.

- Cold Bay-Katmai district: Smith, W. R., 3.

- Controller Bay or Katalla oil field: Martin, G. C., 8.

- Cook Inlet oil fields: Martin, G. C., 8.

- Elephant Mountain: Smith, W. R., 1.

- Goodnews Bay region: Harrington, 6.

- Hyder district: Buddington, 8.

- Iniskin Bay district: Moffit, 3.

- Iniskin-Chinitna Peninsula: Moffit, 7.

- Innoko-Iditarod region: Mertie, 11.

- Jack Bay district: Johnson, B. I., 2.

- Kahiltna Valley: Mertie, 2.

- Kamishak Bay region: Mather, 7.

- Kantishna district: Capps, 6.

- Kejulik Valley: Smith, W. R., 1.

- Kenai Peninsula, southwestern part: Gill, A. C., 2.

- Kennecott: Bateman, 10.

- Kiwalik-Koyuk region: Harrington, 5.

- Knik-Matanuska district: Landes, K. K., 2.

- Kotsina-Kuskulana district: Moffit, 4.

- Marshall mining district: Harrington, 1.

- mineral resources: Brooks, 2.

- Nenana coal field: Martin, G. C., 1, 10.

- Nenana-Kantishna region: Capps, 1.

- Nixon Fork country: Brown, J. S., 7.

- Nixon Fork district, Kuskokwim basin: Martin, G. C., 9.

- northwestern Arctic: Smith, P. S., 7.

- Pearl Creek Dome and Mount Peulik: Smith, W. R., 1.

- Porcupine district: Eakin, 1.

- Ruby district: Mertie, 11.

- Salmon River district: Westgate, 2.

- Sheenjek River district: Mertie, 16.

- Snug Harbor district: Moffitt, 7.

- southeastern: Burchard, 6.

- Talkeetna Mountains: Capps, 6; western: Capps, 3.

Geologic maps—Continued.

Alaska—Continued.

- Toklat-Tonzona River region: Capps, 12.
- Tolstoi district: Harrington, 2.
- Tuxedni Bay area: Moffit, 2.
- upper Matanuska Valley: Capps, 11.
- Wide Bay: Smith, W. R., 1.
- Wrangell district: Buddington, 4.
- York region: Steidtmann, 4.

Alberta: Allan, 14.

- area between Athabaska and Embarras Rivers: Rutherford, 5.
- Banff area: Warren, P. S., 4.
- Battle River: Hume, 20.
- Blackstone, Brazeau, and Pembina rivers foothills belt: Allan, 13.
- Bow River between Cochrane and Kananaskis: Rutherford, 6.
- Drumheller district: Allan, 7.
- foothills belt between McLeod and Athabaska Rivers: Rutherford, 4.
- North Saskatchewan and McLeod Rivers: Rutherford, 8.
- Ribstone Valley: Dowling, 5.
- Saunders Creek and Nordegg coal basins: Allan, 9.
- southern: Stewart, J. S., 1; artesian area: Dowling, 19.
- Turner Valley: McLearn, 14.
- Turner Valley oil area: Hume, 22.
- Wainwright-Vermilion area: Hume, 19.

Appalachian region: Keith, 2.

- Arctic Canada, Baffin Island, Cumberland Sound area: Weeks, L. J., 3.
- Arctic regions, Ellesmere Land: Holte-dahl, 1.

Arizona: Arizona Bur. Mines, 1; Darton, 13.

Aravaipa-Stanley region: Ross, C. P., 5.

- Banner mining district: Ross, C. P., 6.
- Bisbee district: Jones, Ed. L., 6.
- Black Mesa: Reagan, 15.

Bradshaw Mountains quadrangle: Lindgren, 17.

Cave Creek district: Lewis, A. S., 1.

central: Ettlinger, 1.

Christmas area: Ross, C. P., 6.

Courtland-Gleeson region: Wilson, E. D., 2.

Gila region, lower: Ross, C. P., 1.

Globe-Ray region: Ransome, 1.

Grand Canyon: Darton, 12.

Hopi Buttes volcanic field: Reagan, 8.

Jerome district, Yavapai County: Reber, 1.

Jerome quadrangle: Lindgren, 17.

Lees Ferry region: Bryan, 11.

Mazatzal Peak region: Wilson, E. D., 1.

Miami district: Ransome, 1.

Oatman district: Ransome, 12.

Papago country: Bryan, 7.

Payson district: Lausen, 1.

Geologic maps—Continued.

Arizona—Continued.

- Ray district: Ransome, 1.
 - Ray quadrangle: Ransome, 11.
 - San Carlos Indian Reservation: Schwennesen, 1.
 - Superior district: Short, 1.
 - Tombstone district: Jones, Ed. L., 6.
 - Tucson and Amole Mountains: Jenkins, 3.
 - Verde formation: Jenkins, 6.
 - Virgin Mountains: Darton, 16.
- Arkansas: Branner, G. C., 3; Ferguson, J. G., 1.
- Batesville district: Miser, 5, 8.
 - Hot Springs district: Purdue, 1.
 - Pike County, peridotite area: Miser, 10, 18; Prairie Creek area: Miser, 12.
 - Pike, Howard, and Hempstead counties (parts): Miser, 12.
 - southwestern: Ellisor, 2.
- Atlantic and Gulf Coastal Plain: Stephenson, 6.
- Black Hills region: O'Harra, 3.
- British Columbia: Brock, 4; Schofield, 3.
- Ainsworth district: Schofield, 4.
 - Atlin-Telegraph Creek, Cassiar district: Cockfield, 18.
 - Bridge River, Lillooet district: McCann, 3.
 - Cariboo district, Barkerville area: Johnston, W. A., 22.
 - Cassiar district, Devils Elbow Mountain: Kerr, F. A., 2.
 - Chilko Lake area: Dolmage, 15.
 - coast and islands: Dolmage, 8; between Campania Sound and Port Simpson; Dolmage, 9; between Port Simpson and Stewart; Dolmage, 9.
 - Copper Mountain: Camsell, 4.
 - Dease Lake area, Cassiar district: Kerr, F. A., 1.
 - Dewdney Trail: Cairnes, 2.
 - Driftwood Creek area, Babine Mountains: Hanson, 9.
 - Eutsuk Lake area, Coast district: Marshall, J. R., 3.
 - Finlay River district: Dolmage, 17.
 - Fraser River Delta: Johnston, W. A., 17.
 - Hazleton: O'Neill, 1.
 - Hope Mountain: Cairnes, 2.
 - Hudson Bay Mountain, Coast district: Jones, R. H., 1.
 - Kamloops district, North Thompson valley: Uglow, 3.
 - Kettle Valley: Cairnes, 2.
 - Kitsault River to Skeena River: Hanson, 3.
 - Kitsault Valley: Hanson, 2.
 - Kootenay district (part): Walker, J. F., 2.
 - Lakelse Lake area: Marshall, J. R., 5.

Geologic maps—Continued.

British Columbia—Continued.

- Lasqueti Island : MacKenzie, J. D., 3.
 Parson Bay : Crickmay, 9.
 Peace River canyon area : McLearn, 7.
 Peace River district : Spieker, 1.
 Pemberton area, Lillooet district : Cairnes, 8.
 Purcell trench : Schofield, 6.
 Rocky Mountain trench : Shepard, 11.
 Salmon River district : Schofield, 14.
 southeastern : Walker, J. F., 1.
 Taseko Lake-French Bar Creek : MacKenzie, J. D., 2.
 Taseko Valley : MacKenzie, J. D., 1.
 Tatla-Bella Coola area : Dolmage, 16.
 Vancouver Island, Alberni area : MacKenzie, 7; East Sooke Peninsula : Cooke, H. C., 5; Sunloch district : Dolmage, 3.
 Whitesail-Tahtsa lakes area : Marshall, J. R., 3.
 Windermere area, Kootenay district : Walker, J. F., 1.
 Yale district, Silver Creek, Skagit and Similkameen rivers : Cairnes, 5.
 Tulameen area : Poitevin, 6.
 Zymoetz River area, Coast district : Hanson, 11.
- British Honduras : Ower, 1.
- British Virgin Islands : Earle, 5.
- California, Blackhawk Canyon, San Bernardino Mountains : Woodford, 7.
 Capistrano area : Woodford, 3.
 Cuyamaca region : Hudson, F. S., 1.
 Deep Spring Valley : Miller, W. J., 35.
 Del Norte County : Logan, C. A., 1.
 Eocene north of Mt. Diablo : Clark, B. L., 18.
 fault map : Willis, 10.
 Humboldt County, southwestern : Hoots, 7; U. S. G. S., 19.
 Kern County : English, W. A., 1.
 La Jolla quadrangle : Hanna, M. A., 3.
 Los Angeles Basin : Eaton, J. E., 3.
 Point Reyes quadrangle : Dickerson, 2.
 Point Sur quadrangle : Trask, 4.
 Puente Hills region : English, W. A., 3.
 Randsburg quadrangle : Hulin, 3.
 Richfield oil field : Musser, 3.
 Salton Basin : Brown, J. S., 1, 3.
 San Bernardino County (part) : Eckis, 1.
 San Bernardino Mountains : Vaughan, F. E., 1.
 San Diego County : Ellis, A. J., 1.
 San Jacinto and Temecula basins : Waring, 1.
 San Onofre : Woodford, 3.
 Santa Barbara County, Santa Ynez River district : Kew, 2; Nelson, R. N., 1.
 Santa Clara Valley : Reinhard, 1.

Geologic maps—Continued.

California—Continued.

- Santa Rosa and Petaluma quadrangles : Dickerson, 2.
 Santa Rosa Island : Kew, 10.
 Simi Valley : Kew, 1.
 Siskiyou County, Salmon River district : Logan, C. A., 1.
 Sonora quadrangle : Benson, W. N., 2.
 southern coast (part) : Woodford, 3.
 Sunset-Midway field : Pack, R. W., 1.
 Tejon region : Anderson, F. M., 1.
 Ventura Basin : Eaton, J. E., 4.
 Ventura County (part) : Nelson, R. N., 2.
 Warner Range : Russell, R. J., 6.
- Cambrian : Schuchert, 25.
- Canada : Graham, R. P. D., 2.
 central Arctic coast : O'Neill, 5.
 eastern : Brock, 11; Graham, R. P. D., 3.
 Mackenzie River basin : Camsell, 1.
 mineral map : Young, G. A., 5.
 platinum occurrences : O'Neill, 2.
 western : Brock, 11; Graham, R. P. D., 3.
- Canada and Newfoundland : Can. G. S., 3; Young, G. A., 5.
- Central States : Cumings, 1.
- Coal fields : U. S. G. S., 1.
- Colorado : George, R. D., 6; (part) : Campbell, M. R., 3.
 Axial and Monument Butte quadrangles : Hancock, 7.
 Canyon City area : Osborn, 10.
 Catlin quadrangle : Toepelman, 3.
 Creede district : Emmons, W. H., 4.
 De Beque oil field : Winchester, 5.
 Delta and Mesa counties : Weeks, H. J., 1.
 Grand, Jackson, and Larimer counties (parts) : Spock, 1.
 Gunnison River : Hunter, J. F., 1.
 Italian Mountain, Gunnison County : Cross, W., 7.
 La Junta area : Patton, H. B., 3.
 Las Animas, Otero, and Bent counties (parts) : Duce, 1.
 Leadville mining district : Emmons S. F., 1; Loughlin, 31.
 Mancos district : Collier, 3.
 Moffat County : Sears, 3.
 Montezuma County, McElmo anticline : Coffin, 2.
 north central, foothills formations : Henderson, 2.
 northeastern : Mather, 12.
 northwestern : George, R. D., 2; Sears, 5; Winchester, 5.
 Otero County : Lupton, 6.
 Pitkin County, Aspen district : Knopf, A., 10.
 Platoro-Summitville district : Patton, H. B., 1.
 Red Cliff district : Crawford, R. D., 3.

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Colorado—Continued.

- Routt and Moffat counties : Perini, 1.
- Routt County : Crawford, R. D., 1.
- San Juan Basin : Reeside, 8.
- Tarryall district, Park County : Muilenburg, 2.
- Twin Lakes district : Howell, J. V., 1.

Connecticut : Gregory, H. E., 8.

- central : Rice, W. N., 1.
- Glastonbury area : Palmer, H. S., 4.
- Meriden area : Waring, 2.
- New Haven area : Brown, J. S., 9.
- New Haven coast : Brown, J. S., 5.
- Norwalk area : Palmer, H. S., 4.
- Shepaug Aqueduct Tunnel area : Agar, 4.
- southern (part) : Russell, W. L., 1.
- Southington-Granby area : Palmer, H. S., 5.
- Stonington region : Martin, L. H., 1.
- Suffield area : Palmer, H. S., 4.

Cretaceous deposits, eastern Gulf region : Berry, 3.

Delaware, Wilmington quadrangle : Bascom, 2.

Dominican Republic : Vaughan, 16.

- Azua and Barahona provinces : Vaughan, 16.

Florida : Gunter, 3 ; Sellards, 4, 5, 12.

Foxe Land, Baffin Island : Gould, L. M., 6, 8.

Georgia : McCallie, 1, 2, 5.

- Cartersville district : Hull, 1, 3.
- Coastal Plain : Prettyman, 1.
- sand and gravel deposits : Teas, 1.
- Tate quadrangle : Bayley, 13.

Great Lakes region : Fryxell, 1.

Greenland : Böggild, 1, 4, 6.

- northern : Koch, 4.
- northwestern : Koch, 1.
- Peary Land : Koch, 2.

Guatemala : Redfield, 3.

Gulf Coastal Plain : Miser, 7 ; Urbina, 1.

Haiti : Woodring, 5.

- central plain : Woodring, 1.
- northwestern : Lütgens, 1.
- Terre-Neuve region : Woodring, 5.

Huntington-Pittsburgh Basin : Richardson, G. B., 13.

Ice recession : De Geer, 4.

Idaho : Bell, R. N., 4.

- Birch Creek district : Shenon, 2.
- Boise Basin : Ballard, 3.
- Boundary County : Kirkham, 7.
- Buffalo Hump district : Beckwith, R. H., 1, 4.
- Camas Creek Basin : Piper, 4.
- Cassia County, Goose Creek basin : Piper, 1.
- Clark, Jefferson, and parts of Butte, Custer, Fremont, Lemhi, and Madison counties : Kirkham, 9.
- Coeur d'Alene district : Umpleby, 3.

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Idaho—Continued.

Cranes Flat, Henry, and Lanes Creek quadrangles : Mansfield, 10.

Cranes Flat quadrangle : Mansfield, G. R., 29.

De Lamar district : Piper, 6.

eastern : Mansfield, G. R., 8.

Flint mining district : Piper, 6.

Fort Hall Indian Reservation : Mansfield, G. R., 3.

Heath (Cuddy Mountain) mining district : Livingston, 4.

Hell Creek, Fall Creek, Palisade Creek, McKoy Creek, Grays Lake, and Cranés Flat quadrangles : Kirkham, 3.

Henry quadrangle : Mansfield, G. R., 29.

Lanes Creek quadrangle : Mansfield, G. R., 29.

Lapwai area : Kirkham, 11.

Lemhi County (part) : Ross, C. P., 7.

Mud Lake area : Stearns, 9.

north central : Thomson, F. A., 3, 4.

northern, Pleistocene : Anderson, A. L., 2.

Orofino area : Kirkham, 11.

Owyhee County, Bruneau River basin : Piper, 2 ; South Mountain district : Sorenson, 1.

Palouse River area : Kirkham, 10.

Pend Oreille district : Sampson, 16.

Pine Creek district : Jones, Ed. L., 4.

Pocatello area : Anderson, A. L., 3.

Power and Oneida counties : Piper, 3.

Rocky Bar quadrangle : Ballard, 4.

St. Maries area : Kirkham, 8.

Seven Devils district : Livingston, 3.

Shoshone County : Umpleby, 3.

Slug Creek quadrangle : Mansfield, G. R., 29.

Snake River between Burnt River and Salt Creek : Livingston, 4.

south central : Umpleby, 2.

southeastern : Kirkham, 1 ; Mansfield, G. R., 29.

Vienna district : Ross, C. P., 12.

Wardner district : Rickard, 3.

War Eagle and Florida Mountains : Piper, 6.

Washington County, Mineral district : Livingston, 4.

Wood River district : Campbell, S., 8.

Yellow Pine district : Larsen, 3.

Idaho-Wyoming, Crow Creek quadrangle : Mansfield, G. R., 29.

Freedom quadrangle : Mansfield, G. R., 29.

Montpelier quadrangle : Mansfield, G. R., 29.

Illinois : Ill. G. S., 1.

Adams County, northeastern : Currier, 1.

Alto Pass region : Poor, 1.

Ava-Campbell Hill area : Root, 1.

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Illinois—Continued.

- Avon-Canton area: Savage, 6.
 Carbondale quadrangle: Lamar, 3.
 Carlyle-Centralia district: Shaw, 9.
 Colchester and Macomb quadrangles:
 Hinds, H., 1.
 Chicago region, glacial: Fryxell, 1.
 Dixon quadrangle: Knappen, 1.
 east-central: Mylius, 7.
 Edgington-Milan area: Savage, 5.
 Equality-Shawneetown area: Butts,
 5.
 Gillespie quadrangle: Lee, W., 1.
 glacial: Hay, 16.
 Hardin County and Pope County
 (part): Weller, S., 1.
 Hennepin quadrangle: Cady, 3.
 Hennepin and La Salle quadrangles,
 surficial geology: Cady, 3.
 Herscher quadrangle: Athy, 1.
 Joliet quadrangle: Fisher, D. J., 2.
 Kings quadrangle: Bretz, 4.
 La Harpe and Good Hope quad-
 rangles; Savage, 8.
 La Salle quadrangle: Cady, 3.
 mineral industries: Christensen, 1;
 Ill. St. G. S., 3.
 Morris quadrangle: Culver, 2.
 Mount Olive quadrangle: Lee, W., 1.
 New Athens-Okawville area: Shaw,
 8.
 northeastern: Anderson, C. B., 1.
 northern: Thwaites, 7.
 oil and gas fields: Richardson, G. B., 1.
 Pulaski County: Lamar, 10.
 St. Peter sandstone: Lamar, 9.
 Saline and Gallatin counties: Cady, 4.
 Saline County: Cady, 12.
 Williamson and Saline counties
 (parts): Cady, 11.
 Indiana: Logan, 5, 10, 24; Reeves
 J. R., 7.
 glacial: Hay, 16.
 Greene County: Logan, 4; eastern:
 Malott, 1.
 Knobstone cuesta region: Malott, 4.
 Lawrence County: Logan, 4.
 Martin County: Logan, 4.
 Monroe County: Logan, 4.
 Orange County: Logan, 4.
 Owen County: Logan, 4.
 Indiana and surrounding States: Lo-
 gan, 15.
 Iowa: Howell, J. V., 4; Kay, 13; Van
 Tuyl, 8.
 Adair County: Gow, 1.
 Cass County: Tilton, 3.
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 drift sheets: Kay, 4.
 eastern: Norton, W. H., 1.
 Hackberry stage: Fenton, C. L., 3.
 Lake Calvin region, Pleistocene:
 Schoewe, 6.

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Iowa—Continued.

- Lucas County: Lugin, 6.
 Missouri series: Tilton, 7.
 north central: Fenton, C. L., 2, 4.
 Ringgold County, surface deposits:
 Arey, 1.
 Stuart area: Tilton, 5.
 Taylor County, surface deposits:
 Arey, 2.
 Jamaica: Brunton, 2; Cundall, 1.
 Kansas, Allen and Neosho counties:
 Moore, R. C., 5.
 Butler County, Eldorado oil and gas
 field: Fath, 2.
 Cowley County: Elledge, 1.
 Ellis County: Bass, 2.
 Hamilton County: Bass, 2.
 northeastern, Pleistocene: Schoewe,
 5.
 oil and gas fields: U. S. G. S., 2.
 Quaternary deposits: Moore, R. C., 4.
 Russell County: Rubey, 3.
 Syracuse and Lakin quadrangles:
 Darton, 2.
 Wilson and Montgomery counties:
 Moore, R. C., 6.
 Kansas and Oklahoma: Snider, 1.
 Kansas and the adjoining region:
 Moore, R. C., 4.
 Kentucky: Jillson, 20, 70, 72, 86, 87.
 Adair County: Miller, A. M., 20.
 Allen County: Miller, A. M., 5;
 Shaw, E. W., 1.
 Barren County: Butts, 2.
 Bath County, oil and gas: Ky. G. S.,
 35.
 Barren County, oil and gas: Ky. G.
 S., 23.
 Bell County: Ky. G. S., 46.
 Bells Run anticline, Ohio County,
 structural: Ky. G. S., 36.
 Bourbon County: Dunn, P. H., 1.
 Boyd County, oil and gas: Ky. G. S.,
 25; structural: Ky. G. S., 11.
 Bracken County, oil and gas map:
 Ky. G. S., 30.
 Breathitt County: Jillson, 13; Ky.
 G. S., 1, 37.
 Butler County: Glenn, 11; Jillson,
 95, 103.
 Caldwell County: Weller, 17.
 Carter County: Ky. G. S., 26.
 Cave in Rock quadrangle: Weller, 16.
 Christian County: Sutton, 2.
 Clay County: Ky. G. S., 38.
 Dawson Springs quadrangle: Sut-
 ton, 1.
 Edmonson County: Ky. G. S., 31.
 Elliott County, oil and gas: Ky.
 G. S., 27.
 Estill County, lower Miller Creek:
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 tural: Ky. G. S., 5.
 Garrard County: McFarlan, 2.

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Kentucky—Continued.

- Golconda and Cave in Rock quadrangles: Weller, 10.
 Grayson County: Ky. G. S., 32.
 Green County, oil and gas map: Ky. G. S., 50.
 Greenup County: Ky. G. S., 33.
 Hancock County, oil and gas: Ky. G. S., 13.
 Harlan County: Ky. G. S., 39.
 Hartford quadrangle: Gardner, J. H., 4.
 Henderson County: Ky. G. S., 40.
 Hopkins County: Theis, 1.
 Irvine and Berea region: Ky. G. S., 14.
 Isonville oil pool, Elliott County, structural: Ky. G. S., 15.
 Jackson County: Eyl, 1.
 Jackson Purchase region: Jillson, 28.
 Jephtha Knob: Bucher, 9.
 Johnson County: Ky. G. S., 3.
 Knott County: Jillson, 13; structural geology: Ky. G. S., 2.
 Knox County: Ky. G. S., 28.
 Lawrence County: Ky. G. S., 34.
 Lee County: Eyl, 2; Ky. G. S., 41.
 Leslie County: Ky. G. S., 16.
 Lewis County: Perry, E. S., 1.
 Lincoln County: Ky. G. S., 42.
 Livingston County: Weller, 14.
 Lyon County: Roberts, J. K., 5.
 McCready County: Murphy, 1.
 McLean County, economic: Ky. G. S., 17.
 Magoffin County: Ky. G. S., 4.
 Martin County, structural: Ky. G. S., 6, 18.
 Metcalfe County, oil and gas data: Ky. G. S., 19.
 Monroe County, oil and gas data: Ky. G. S., 7.
 Morgan County: Robinson, L. C., 1.
 Muhlenberg County: Ky. G. S., 20.
 Nelson County: Ky. G. S., 53.
 Ohio County: Jillson, 88, 104.
 Owsley County: Ky. G. S., 43.
 Paint Creek uplift: Ky. G. S., 21.
 Perry County: Ky. G. S., 22.
 Pike County, structural: Ky. G. S., 8.
 Powell County: Ky. G. S., 44.
 Princeton quadrangle: Weller, 7.
 Rockcastle uplift, Laurel and Clay counties: Ky. G. S., 9.
 Taylor County, oil and gas: Ky. G. S., 29.
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 Warren County: Shaw, E. W., 1; oil and gas map: Ky. G. S., 54.
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Kentucky—Continued.

- Williamsburg anticline, Whitley County: Ky. G. S., 10.
 Woodford County: Miller, A. M., 21.
 Kentucky and adjoining States: Jillson, 1, 2.
 Labrador, Komaktorvik Fiord: Coleman, 6.
 Nachvak Fiord: Coleman, 6.
 northeastern, and New Quebec: Coleman, 6.
 Louisiana: Glenk, 1; Hay, 23.
 northern, structure: Spooner, 2.
 oil and gas fields: Richardson, G. B., 2.
 Shreveport area: Whittemore, J. W., 1.
 Mackenzie, Mackenzie basin: Cameron, 1; Camsell, 1.
 lower Mackenzie valley: Kindle, 9.
 Mackenzie River between Norman and Beaver River: Hume, 5; between Wrigley and Norman: Hume, 8.
 Mackenzie River district: Whittaker, 2; Williams, M. Y., 13.
 Maine: Smith, G. O., 15.
 Belfast quadrangle: Perkins, E. H., 3.
 Liberty quadrangle: Perkins, E. H., 3.
 Moosehead Lake area: Perkins, E. H., 4.
 Vassalboro quadrangle: Perkins, E. H., 3.
 Manitoba: Prather, 1; Wallace, 14, 19.
 Beresford Lake area: Wright, D. G. H., 2; Wright, J. F., 4.
 Bigstone and Fox rivers area: Merritt, J. W., 4.
 Flinflon area: Alcock, 15.
 Island Lake area: Wright, J. F., 12.
 Maskwa River nickel-copper deposits: McCann, 1.
 mineral occurrences: Wallace, 14, 19.
 Oiseau River area: Cooke, H. C., 9; Wright, J. F., 10.
 Oswagan Lake-Burntwood River area: Alcock, 9.
 Oxford and Knee lakes area: Wright, J. F., 11.
 Rat River: Alcock, 10.
 Reed and Wekusko lakes region: Alcock, 3.
 Rice Lake area: Cooke, H. C., 9; Wright, J. F., 3, 6.
 southern glacial geology: Wallace, 14.
 Upper Whitemouth area: Johnston, W. A., 3.
 Winnipegosis area: Johnston, W. A., 3.
 Martinique, eastern: Barrabé, 1.

Geologic maps—Continued.

- Maryland, Cambrian and Ordovician :
 Bassler, R. S., 1.
 coals of Georges Creek and upper
 Potomac basins : Swartz, C. K., 4.
 Elkton quadrangle : Bascom, 2.
 Kent County : Miller, B. L., 6.
 Piedmont Plateau : Knopf, E. B., 3.
 Queen Annes County : Miller, B. L.,
 7.
 Silurian : Swartz, C. K., 5.
 western Piedmont : Jonas, 4.
 Massachusetts, Cape Ann, Andrew's
 Point : Warren, C. H., 2.
 central western : Miller, W. J., 10.
 Essex County : Clapp, C. H., 1.
 eastern : Warren, C. H., 2.
 Medford dike : Billings, 1.
 Ware and Quinsigamond quad-
 rangles : Alden, 2.
 Massachusetts and New York, Pitts-
 field and Becket quadrangles :
 Dale, T. N., 5.
 Mexico : Iglesias, 1; Lewis, S. J., 1;
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 Coahuila, northern : Cummings, 2.
 Colima (part) : Vivar, 4.
 El Oro and Tlalpujahua districts :
 Flores, 1.
 Guanajuato mining district : Wandke,
 8.
 Hidalgo, Apan district : Camacho, 1.
 Lower California : Marland Oil Co.,
 1; Distrito Sur : Bustamante, 2;
 La Purisima region : Heim, 1;
 southern : Gálvez, 7.
 petroleum : Ortega, G., 1.
 southern : Ver Wiebe, 2.
 Zacualpan district : Lewis, S. J., 1.
 Michigan, Alpena County : Ver Wiebe,
 10.
 Chippewa County : Ver Wiebe, 11.
 Lower Peninsula : Phalen, 1.
 Marquette and Menominee districts :
 Winchell, A. N., 2.
 Roscommon County : Ver Wiebe, 8.
 Southern Peninsula, clay and shale
 areas : Brown, G. G., 1.
 surface formations : Leverett, 14.
 Mid-Continent oil fields : Bosworth, 1.
 Mid-Continent and north Texas oil re-
 gions : Rogers, G. S., 7.
 Minnesota : Hay, 23; Sardeson, 1;
 Stauffer, 7.
 clay materials : Grout, 2.
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 Herman, Barrett, Chokio, and Mor-
 ris quadrangles : Sardeson, 1.
 St. Louis County, northern : Grout,
 20.
 surface formations : Leverett, 4.
 Vermilion iron range : Schwartz, 7.
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 Mississippi : Lowe, 2, 3, 9; Stephen-
 son, 10.
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- Missouri : Buehler, 3.
 Devonian formations along the Mis-
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 Bearpaw Mountains : Reeves, F., 7.
 Beartooth Mountains : Bevan, 2.
 Cat Creek oil field : Lupton, 1.
 central and eastern : Clapp, C. H., 2.
 Ekalaka field : Bauer, 4.
 faulted area south of Bearpaw
 Mountains : Reeves, F., 8.
 Fergus County, Winifred area :
 Reeves, F., 6.
 Huntley field : Hancock, 2.
 Ingomar anticline, Treasure and
 Rosebud counties : Heald, 18.
 Jordan coal field : Bowen, C. F., 2.
 Kevin-Sunburst oil field : U. S. G.
 S., 11.
 McCarthy Mountain area : Richards,
 R. W., 2.
 Melrose phosphate field : Richards.
 R. W., 2.
 Musselshell and Golden Valley coun-
 ties : Ellis, A. J., 5.
 Philipsburg district : Pardee, 8.
 Philipsburg phosphate field : Par-
 dee, 6.
 Rosebud County : Renick, 5.
 Scobey lignite field, Valley, Daniels,
 and Sheridan counties : Collier, 9.
 Stanford hematite district : West-
 gate, 1.
 Sweet Grass Hills : Kemp, 8.
 Three Forks-Yellowstone Park re-
 gion : Condit, 5.
 Townsend Valley : Pardee, 10.
 Nebraska, Pennsylvanian : Condra, 2.
 Nevada, Divide district : Knopf, A., 3.
 Elko area : Winchester, 5.
 Gilbert district : Ferguson, H. G., 10.
 Manhattan district : Ferguson, H. G.,
 2, 5.
 Mills City tungsten district : Hess,
 11.
 Muddy Mountain overthrust : Long-
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 well, 1, 15.
 Pilot Mountains : Foshag, 32.
 Pioche district : Westgate, 6.
 Pleistocene lake beds : Clark, W.
 O., 1.
 Rochester district : Knopf, A., 7.
 Santa Fe district, Mineral County :
 Clark, C. W., 2.
 Toquima Range : Ferguson, H. G.,
 2, 4.
 New Brunswick, Burnthill Brook area :
 Young, G. A., 1.
 Chipman sheet, Queens County :
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 Kings County, Sussex area : Hayes,
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- New Brunswick—Continued.
 Minto sheet, Sunbury County : Dyer, 8.
 Moncton area : Wright, W. J., 2.
 Newfoundland : Howley, 1 ; Snelgrove, 1, 2.
 St. George's coal field : Baker, H. A., 2.
 west coast : Brunton, 3.
 New Hampshire : Goldthwait, 6 ; glacial : Goldthwait, 6.
 Ammonoosuc district : Ross, C. P., 2.
 Hanover district : Merritt, J. W., 3.
 White Mountains, North Conway quadrangle : Billings, 5.
 New Jersey, greensand beds : Mansfield, 12.
 New Mexico : Darton, 25 ; Ellis, R. W., 5 ; (parts) : Darton, 26.
 Alamosa Creek valley : Winchester, 3.
 Carlsbad region : Meinzer, 16.
 Gallup coal district, McKinley County : Sears, 6.
 Gallup-Zuni Basin : Sears, 6.
 Guadalupe group : Darton, 19.
 Iron Mountain : Smythe, 2.
 Jornada del Muerto : Darton, 11.
 Mogollon district : Ferguson, H. G., 1, 8.
 Puertecito district : Wells, E. H., 2.
 Raton coal field : Lee, W. T., 10.
 Raton-Brilliant-Koehler area : Lee, W. T., 6.
 Roswell artesian basin : Fiedler, 2.
 Sandia and Manzano mountains and Sierra de los Pinos : Darton, 11.
 Sandia Mountains : Ellis, R. W., 2.
 San Juan County : Bauer, C. M., 1.
 southeastern : Hoots, 1 ; Anon., 58.
 Taos Range : Gruner, 1.
 Tularosa Basin : Darton, 11 ; Powell, 1.
 Tyrone district : Paige, 2.
 Valencia and Socorro counties (parts) : Darton, 11.
 Zuni Indian Reservation : Sears, 6.
 New York : Miller, W. J., 23.
 Adirondacks : Newland, 2.
 Canton quadrangle : Chadwick, 5.
 Catskill region : Jones, R. W., 1.
 Clove quadrangle : Dale, T. N., 5.
 Cohoes quadrangle, glacial : Stoller, 2.
 eastern, Pleistocene : Fairchild, H. L., 1.
 Gouverneur quadrangle : Cushing, 1.
 Lake Bonaparte quadrangle : Smyth, 2.
 Lake Bonaparte-Lowville quadrangles : Buddington, 2.
 Lake Placid quadrangle : Miller, W. J., 1.
 Lyon Mountain quadrangle : Miller, W. J., 26.
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- New York—Continued.
 Newburgh quadrangle : Holzwasser, 1.
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 Rouses Point quadrangle : Hudson, G. H., 1.
 St. Regis and Saranac quadrangles (parts) : Alling, H. L., 1 ; glaciation : Alling, H. L., 1.
 Schroon Lake quadrangle : Miller, W. J., 2.
 Skaneateles region : Monnett, 3.
 West Point quadrangle : Berkey, 3.
 New York, Massachusetts, and Connecticut, Sheffield and Sandisfield quadrangles : Dale, T. N., 5.
 New York, Massachusetts, and western Vermont, Greylock, Berlin, and Hoosick quadrangle : Dale, T. N., 5.
 North America : Pirsson, 2, 5 ; Schuchert, 23.
 North Carolina : Bryson, 3.
 Cherokee County, Nottely and Valley River belt : Bayley, 5, 11.
 Cretaceous : Stephenson, 4.
 Deep River pyrophyllite deposits : Stuckey, 1.
 Deep River region : Stuckey, 5.
 North Dakota : Leonard, A. G., 1 ; Willard, D. E., 2.
 Marmarth field : Hares, 5.
 New Salem lignite field : Hancock, 6.
 western : Stanton, 3.
 Northern Great Plains : Alden, 3.
 Nova Scotia : Brunton, 6, 10 ; (physiographic) : Goldthwait, 5.
 Arisaig district : McLearn, 8.
 Cape Breton County, Sydney : Hayes, A. O., 6.
 Horton-Windsor district : Bell, W. A., 2.
 Inverness County, Lake Ainslie district : Bell, W. A., 12.
 Malagash Peninsula, Cumberland County : Hayes, 2.
 North Mountain, Cape Breton : Guernsey, 2.
 Northumberland Strait : Bell, W. A., 10.
 Richmond County, Stirling area : Weeks, L. J., 1.
 Ohio : Bownocker, 1 ; Westgate, 5.
 Camp Sherman quadrangle : Hyde, 1.
 Delaware County : Westgate, 5 ; glacial : Westgate, 5.
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- Summerfield and Woodsfield quadrangles: Condit, 3.
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 Arbuckle Mountain region: Cooper, 1; Reeds, 11; western end: Birk, 2.
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 Ardmore quadrangle: Goldston, 1.
 Beaver County: Gould, 15.
 Beckham County: Gouin, 2.
 Bristow quadrangle: Fath, 6.
 Caddo and Grady counties: Becker, 1.
 Carter County: Tomlinson, 4; (part); Roth, 2; Criner Hills: Powers, 22.
 Cimarron County: Rothrock, 4.
 Cleveland and McClain counties: Anderson, G. E., 4.
 Coal and Pittsburg counties: Clawson, 1.
 Comanche County: Gouin, 3.
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 Grandfield Bridge sheet: Sellards, 18.
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 Jefferson County: Robinson, H. M., 3.
 Kay, Grant, Garfield, and Noble counties: Clark, G. C., 3.
 Kingfisher and Canadian counties: Kite, 1.
 Leflore and McCurtain counties: Honess, C. W., 5.
 Logan County: Bale, 1.
 Love County: Bullard, 2.
 Marshall County: Bullard, 3.
 mineral resources: Okla. G. S., 1.
 Muskogee County: Soyster, 1.
 northeastern, structure map: Thom, 11; subsurface distribution of pre-Chattanooga rocks: White, L. H., 2, 3.
 oil and gas fields: U. S. G. S., 6.
 Okmulgee district: Clark, R. W., 1.
 Osage County: Beckwith, H. T., 1.
 Osage Reservation: Goldman, 4; Heald, 1-4; Hopkins, O. B., 1; Ross, C. S., 2; Roundy, 1.
 Ouachita Mountains: Miser, 29.
 Papoose oil field: Roark, 2.
 Rogers County: Woodruff, 4.
 south central: Bullard, 2, 3.
 southeastern: Honess, C. W., 2.
 southern: Moore, R. C., 10; (part): Hopkins, O. B., 2; Stonewall quadrangle: Morgan, G. D., 6; structural trends: Decker, L., 1.
 southwestern: Gould, 5; Sawyer, 1.
 Stephens County: Gouin, 1.
 Texas County: Gould, 11.
 upper Paleozoic: Gould, C. N., 19.

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Oklahoma—Continued.

- Washington County: Carpenter, E., 2.
 western: Bullard, 4.
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Rocky Bar quadrangle: Ballard, 4.

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Salmon area: Ross, C. P., 7.

Seven Devils district: Livingston, 3.

Shoshone County: Umpleby, 3.

Silver City region: Piper, 6.

Southeastern Idaho: Mansfield, G. R., 29.

South Mountain district, Owyhee County: Sorenson, 1.

Yellow Pine cinnabar district: Larsen, 3.

Economic geology.

Antimony: Thomson, F. A., 1.

Antimony and quicksilver deposits, Yellow Pine district, Valley County: Schrader, 10.

Boise Basin district: Ballard, 1.

Bonneville County, coal prospects: Kirkham, 12.

Boundary County: Kirkham, 7.

Buffalo Hump district, quartz veins: Beckwith, R. H., 2, 4.

Bunker Hill lode, Wardner: Rickard, 3.

Cement materials, Pocatello: Anderson, A. L., 3.

Cinnabar, near Black Pine: Larsen, E. S., 1.

Clark County, coal and gas possibilities: Kirkham, 12.

Clays: Skeels, 1.

Coal, eastern Idaho: Mansfield, G. R., 8.
Horseshoe district, Teton basin: Evans, G. W., 1.

Cobalt, Lemhi County: Hess, 5.

Coeur d'Alene district: Berg, 1; Eby, J. H., 1; Umpleby, 3, 5; Waldschmidt, 8.

Copper near Salmon: Ross, C. P., 3, 7.

Seven Devils district: Livingston, 3.

Disseminated lead prospect, Boise County: Ross, C. P., 10.

General: Bell, R. N., 5.

Glacially transported mine, Gilmore: Walker, R. T., 1.

Gold, Boise Basin: Ballard, 3.

Idaho batholith: Thomson, F. A., 4.
north central Idaho: Thomson, F. A., 3.

Idaho—Continued.

Economic geology—Continued.

Gold, silver, copper, lead, and zinc: Gerry, 1, 3, 5, 8, 10, 13.

Gold veins, central Idaho: Roberts, H. M., 1.

Gypsum: Stone, 11.

Horseshoe Basin coal field: Evans, G. W., 4.

I. X. L. copper prospect, Adams County: Bell, R. N., 3.

Kaolin and feldspar: Wilson, H., 1.

Manganese: Livingston, 2.

Bannock County: Hewett, 19.

Mica deposits, Latah County: Anderson, A. L., 1.

Mineral and Cuddy Mountain mining districts, Washington and Adams counties: Livingston, 4.

Mining districts: Varley, 1.

Mining industry: Bell, R. N., 1, 2, 4; Campbell, S., 1, 3-7.

Molybdenite, Rocky Bar district: Schrader, 7.

Molybdenum: Livingston, 2.

Native lead, Hailey: Shannon, 73.

Oil shale: Condit, 2; Winchester, 5.

Oil possibilities: Heald, 10.

Bingham, Bonneville, and Caribou Counties: Kirkham, 3.

southeastern Idaho: Kirkham, 1, 5.

southwestern and south-central Idaho: Buwalda, 5.

Ore deposition, Buffalo Hump district: Beckwith, R. H., 3.

Ore deposits in Tertiary lava, Salmon River Mountains: Ross, C. P., 13.

Phosphate deposits: Kirkham, 4; Mansfield, G. R., 35.

Quartzburg, Gold Hill mine: McDermid, 1.

Quicksilver: Livingston, 2.

Rocky Bar quadrangle: Ballard, 4.

Salt deposits: Phalen, 1.

Shoshone County: Umpleby, 3.

Silver, Pend Oreille district: Sampson, 16.

Silver City region: Piper, 6, 7.

South-central Idaho: Umpleby, 2.

Tin: Livingston, 2.

Tungsten: Livingston, 2.

Vienna district, Blaine County: Ross, C. P., 12.

Wood River district: Campbell, S. S.,
Yellow Pine cinnabar district: Larsen, 3.

Zonal distribution of gold, silver, lead, and copper ores: Thomson, F. A., 6.

Historical geology.

Bozeman beds: Keyes, 19.

Buffalo Hump district: Beckwith, R. H., 1, 4.

Coeur d'Alene region: Eby, J. H., 1; Shannon, 14.

Eastern Idaho: Mansfield, G. R., 8.

Idaho—Continued.

Historical geology—Continued.

- Granitic rocks, age: Ross, C. P., 16.
 Igneous geology, southeastern Idaho: Mansfield, G. R., 10.
 Mud Lake Basin: Stearns, 4, 6.
 Paleozoic: Ross, C. P., 11.
 Payette formation, age: Buwalda, 8.
 Pend Oreille district: Sampson, 16.
 Potlatch area: Kirkham, 10.
 Richmond formation(?): Cook, C. W., 8.
 Rocky Bar district: Schrader, 7.
 St. Maries area: Kirkham, 8.
 Silver City district: Piper, 7.
 Snake River valley: Buwalda, 3.
 South-central Idaho: Ross, C. P., 15; Umpleby, 2.
 Southeastern Idaho: Kirkham, 5; Mansfield, G. R., 30; Triassic and Jurassic: Mansfield, G. R., 6.
 Vienna district, Blaine County: Ross, C. P., 12.
 Wasatch and Salt Lake formations, southeastern Idaho: Mansfield, G. R., 5.
 Yellow Pine district, Valley County: Schrader, 10.

Mineralogy.

- Amphibole similar to hudsonite, Custer County: Shannon, 49.
 Anglesite, Coeur d'Alene district: Shannon, 2, 17.
 Atlanta district: Shannon, 79.
 Black sands: Shannon, 25.
 Boulangerite, Blaine county: Shannon, 28; Mullan: Shannon, 19.
 Brannerite, Stanley Basin: Hess, 6.
 Calcite, Pioneerville district: Shannon, 17.
 Calcite oolites of pentagonal dodecahedral form, Eagle Rock: Shannon, 69.
 Ferroanthophyllite, Coeur d'Alene district: Shannon, 21.
 Galenobismutite, Boise County: Shannon, 30.
 Garnet: Shannon, 39.
 Gersdorffite: Shannon, 47.
 Gouge clays, mineralogy: Shannon, 35.
 Hisingerite, Blaine County: Hewett, 14.
 Jamesonite containing silver, Owyhee County: Shannon, 19.
 Slate Creek, Custer County: Shannon, 57.
 Linarite and leadhillite, Wardner: Shannon, 5.
 Ludwigite, Lemhi County: Shannon, 24.
 Meteorite, Oakley: Merrill, 47, 52.
 Miargyrite and tetrahedrite, Flint district: Shannon, 78.
 Minerals: Shannon, 61.
 Mordenite and associated minerals, Challis, Custer County: Ross, C. S., 6.

Idaho—Continued.

Mineralogy—Continued.

- Naumannite, Silver City district: Shannon, 20.
 Native lead, Hailey: Shannon, 73.
 Niter deposit, Dubois: Stearns, H. T., 2.
 Owyheeite, Owyhee: Shannon, 27.
 Tetradymite, Hailey quadrangle: Shannon, 58; Pine Creek district: Shannon, 17.
 Trichalcite, Shoshone County: Shannon, 34.
 Tridymite and cristobalite in a granitic xenolith: Weymouth, 2.
 Vanadinite, Lemhi County: Stearns, H. T., 1.
 Vivianite, Clearwater County: Shannon, 22.
 Xanthoconite, Atlanta district: Shannon, 79.
 Zeophyllite, Salmon River district: Fairbanks, 9.
 Zircon, occurrence, Pend Oreille: Gillson, 36.

Paleontology.

- Carboniferous and Triassic, southeastern Idaho: Girty, 10.
 Idaho formation, Snake River valley: Dall, 10.
 Orygoceras, Tertiary: Dall, 7.
 Payette flora: Chaney, 6.

Petrology.

- Coeur d'Alene district: Shannon, 14.
 Granitic rocks, age: Ross, C. P., 16.
 Granodiorites, Pend Oreille district: Gillson, 6.
 Idaho batholith: Beckwith, R. H., 1.
 Southeastern Idaho: Mansfield, 10.

Physical geology.

- Asotin craters of Columbia River basalt: Fuller, R. E., 3.
 Craters of the Moon National Monument: Stearns, H. T., 14.
 Faulting, northern Idaho: Umpleby, 3.
 Fissure eruption, western Idaho: Fuller, R. E., 2.
 Mud Lake basin, igneous geology: Stearns, 4.
 Osburn fault: Umpleby, 5.
 Rate of soil deposition, Palouse area: Peterson, P. P., 1.
 Rocky Mountain structure, southeastern Idaho: Mansfield, G. R., 4, 15.
 Southeastern Idaho: Mansfield, G. R., 11, 33.
 Volcanism, Mud Lake area: Stearns, 9.

Physiographic geology.

- Craters of the Moon: Stearns, H. T., 12; Stearns, N. D., 3.
 National Monument: Stearns, H. T., 3, 14.
 Drainage changes, northern Idaho: Anderson, A. L., 2.
 Features of glacial origin: Davis, W. M., 3.

Idaho—Continued.

Physiographic geology—Continued.

Idaho peneplain, age: Buwalda, 8.

Relief map: U. S. G. S., 10.

Southeastern Idaho: Mansfield, 13, 22, 23.

Tertiary planation, central Idaho: Mansfield, 19; Ross, C. P., 8.

Underground water.

Big Lost River valley: Kirkham, 12.

Camas Creek Basin: Piper, 4.

Goose Creek basin, Cassia County: Piper, 1.

Idaho Falls: Piper, 5.

Lapwai area: Kirkham, 11.

Moscow: Laney, 1.

Mud Lake basin: Stearns, 6.

Orofino area: Kirkham, 11.

Pahsimeroi Valley: Meinzer, 8.

Potlatch area: Kirkham, 10.

Thermal springs: Meinzer, 10.

St. Maries area: Kirkham, 8.

Weiser area: Kirkham, 12.

Identification of geological formations: Udden, J. A., 3.

Igneous and volcanic rocks. See also Intrusions; Magmas; Petrology.

Aa and pahoehoe, formation: Washington, 23.

Alabama: Adams, S. F., 2.

Ashland graphite area: Brown, J. S., 6.

Clay County: Prouty, 10.

Alaska: Martin, G. C., 15.

Alaska Railroad region: Capps, 6.

Anvik-Andreafski region: Harrington, 1.

Chandalar district: Mertie, 12.

Chicagof Island: Buddington, 8; western part: Overbeck, 1.

Coast Range intrusives: Buddington, 14.

Cold Bay district: Capps, 5.

Cold Bay-Chignik district: Smith, W. R., 1.

Cold Bay-Katmai district: Smith, W. R., 3.

Goodnews Bay region: Harrington, 6.

Kahiltna Valley: Mertie, 2.

Kamishak Bay region: Mather, 7.

Katmai region: Fenner, 8.

Kennecott: Bateman, 3.

Kiwalik-Koyuk region: Harrington, 5.

Knik-Matanuska district: Landes, K. K., 2.

Kotsina-Kuskulana district: Moffit, 4.

Nixon Fork country: Brown, J. S., 7. northern, Canning River region: Leffingwell, 1.

Porcupine district: Eakin, 1.

Ruby-Kuskokwim region: Mertie, 11.

Salmon-Unuk River region: Mertie, 6.

Igneous and volcanic rocks—Continued.

Alaska—Continued.

southeastern: Buddington, 13; submarine pillow lavas: Buddington, 10.

Talkeetna Mountains, western: Capps, 3.

Tolstoi district: Harrington, 2.

Toklat-Tonzona River region: Capps, 12.

Tuxedni Bay area: Moffit, 2.

upper Matanuska Valley: Mertie, 14.

Anorthosites, formation: Loewinson-Lessing, 1.

Arizona: Darton, 17.

Aravaipa-Stanley region: Ross, C. P., 5.

central: Ettlinger, 1.

Courtland-Gleeson region: Wilson, E. D., 2.

Jerome and Bradshaw Mountains quadrangles: Lindgren, 17.

Jerome district, Yavapai County: Fearing, J. L., 2; Reber, 1.

lower Gila region: Ross, C. P., 1.

Oatman district: Ransome, 12.

Papago country: Bryan, 7, 15.

Payson district: Lausen, 1.

Ray quadrangle: Ransome, 11.

Ray-Miami region: Ransome, 1.

Saddle Mountain and Banner mining districts: Ross, C. P., 6.

Tucson and Amole Mountains: Jenkins, 3.

Arkansas, Hot Springs district: Lloyd, E. R., 2.

Pike County, peridotite: Miser, 12.

Assimilation and petrogenesis: Stansfield, 7.

Average chemical composition: Clarke, F. W., 3.

Basic and ultrabasic rocks, tectonic conditions accompanying intrusion: Benson, W. N., 2.

Batholiths, laterally spreading theory: Chamberlin, R. T., 16. problems of: Grout, 24.

Belcher Islands, Hudson Bay: Moore, E. S., 1.

British Columbia: Brock, 14.

Ainsworth district: Schofield, 4.

Bridge River area: McCann, 3.

coast and islands: Dolmage, 8.

Cariboo district. Barkerville area: Johnston, W. A., 22.

Chiko Lake area: Dolmage, 15.

Coquihalla area: Cairnes, 4.

Dease Lake area, Cassiar district: Kerr, F. A., 1.

Driftwood Creek area, Babine Mountains: Hanson, 9.

Emory Creek, Yale district: Cairnes, 9.

Eutsuk Lake area, Coast district: Marshall, J. R., 3.

Igneous and volcanic rocks—Continued.

British Columbia—Continued.

- Eutsuk Lake district: Brock, 1.
 Fraser River Delta: Johnston, W. A., 17.
 Kamloops district, North Thompson valley: Uglow, 3.
 Lasqueti Island: MacKenzie, J. D., 3.
 Milbank Sound region, post-Pleistocene volcanics: Dolmage, 10.
 Parson Bay: Crickmay, 1.
 Pemberton area, Lillooet district: Cairnes, 8.
 Prince Rupert to Burns Lake: Hanson, 10.
 Salmon River district: Schofield, 11.
 Texada Island: Swanson, C. O., 2.
 Vancouver area: Schofield, 17.
 Vancouver Island, East Sooke Peninsula: Cooke, H. C., 5.
 Whitesail-Tahtsa lakes area: Marshall, J. R., 3.
 Windermere area, Kootenay district: Walker, J. F., 1.
 Yale district: Cairnes, 5.
 British Honduras: Ower, 2, 3.
 British Virgin Islands: Earle, 5.
 California, Blackhawk Canyon, San Bernardino Mountains: Woodford, 7.
 Deep Spring Valley: Miller, W. J., 35.
 Hollywood Hills, near Los Angeles: Schürmann, 1.
 La Jolla quadrangle: Hanna, M. A., 3.
 Lassen Peak region: Williams, H., 1.
 Los Angeles and Ventura counties: Kew, 6.
 Point Sur quadrangle: Trask, 5.
 Randsburg quadrangle: Hulin, 3.
 Sacramento Valley: Bryan, 10.
 San Bernardino Mountains: Vaughan, F. E., 1.
 San Diego County: Ellis, A. J., 1.
 San Gabriel Mountain: Miller, W. J., 29.
 Sierra Nevada, inclusions in granitic rocks: Pabst, 1.
 Sunset-Midway field: Pack, R. W., 1.
 Warner Range: Russell, R. J., 6.
 Central America: Putnam, P. C., 2.
 Classification: Hodge, E. T., 2, 3, 7, 9; Johannsen, 3; Loughlin, 33; Pirs-son, 4.
 Colorado, Boulder County, Ward region: Worcester, 1.
 central: Crawford, R. D., 2.
 Creede district: Emmons, W. H., 4.
 Delta and Mesa counties: Weeks, H. J., 1.
 Golden area: Johnson, J. H., 14.
 Grand, Jackson, and Larimer counties (parts): Spock, 1.
 Gunnison River: Hunter, J. F., 1.
 Las Animas, Otero, and Bent counties (parts): Duce, 1.

Igneous and volcanic rocks—Continued.

Colorado—Continued.

- Leadville mining district: Emmons, S. F., 1.
 Monument Butte quadrangle: Hancock, 7.
 northwestern: Ross, C. S., 14.
 Pitkin County, Aspen district: Knopf, A., 10.
 Platoro-Summitville district: Patton, H. B., 1.
 Red Cliff district: Crawford, R. D., 3.
 Routt and Moffat counties: Perini, 1.
 Routt County: Crawford, R. D., 1.
 southwestern: Coffin, 3.
 Tarryall district, Park County: Mui-
 lenburg, 2.
 Twin Lakes district: Howell, J. V., 1.
 Columbia River basalt, Asotin craters: Fuller, R. E., 3.
 Composition, texture, classification, description, and occurrence: Iddings, 2.
 Connecticut, Middletown area: Rice, W. N., 1.
 Shepaug Aqueduct Tunnel area: Agar, 4.
 Southampton-Granby area: Palmer, H. S., 5.
 Stonington region: Martin, L. H., 1.
 Triassic basalts: Foye, 11.
 Constituents and distribution: Clarke, F. W., 4.
 Contact metamorphism: Bain, 25.
 Costa Rica: Redfield, 7; Sears, 1.
 Density, average: Washington, 15.
 calculation from norm: Iddings, 3.
 in relation to isostasy: Washington, 27.
 Diabase and dolerite: Johannsen, 12.
 District of Columbia: Washington, 12.
 Dominica: Earle, 11.
 Dominican Republic: Vaughan, 16.
 Evolution: Bowen, 23.
 Final consolidation phenomena in the crystallization of igneous rock: Colony, 4.
 General: Washington, 4.
 Georgia, Tate quadrangle: Bayley, 13.
 Graphic study of igneous rock series: Grout, 8.
 Greenland: Böggild, 1.
 northwestern: Hovey, 11; Koch, 1.
 Haiti: Woodring, 4, 5.
 Hawaiian Islands: Powers, 5.
 Kaula, Nikoa, Necker, and Gardner islands: Palmer, H. S., 9.
 Kilauea: Stone, J. B., 1.
 Honduras: Redfield, 8.
 Idaho, Bingham, Bonneville, and Caribou counties: Kirkham, 3.
 Boundary County: Kirkham, 7.
 Buffalo Hump district: Beckwith, 4.
 Camas Creek basin: Piper, 4.

Igneous and volcanic rocks—Continued.

Idaho—Continued.

- Cassia County, Goose Creek basin: Piper, 1.
 Coeur d'Alene district: Shannon, 14.
 Craters of the Moon National Monument: Stearns, H. T., 14.
 Fort Hall Indian Reservation: Mansfield, G. R., 3.
 granitic rocks: Ross, C. P., 16.
 Idaho batholith: Beckwith, R. H., 1.
 Lapwai area: Kirkham, 11.
 Mineral and Cuddy Mountain mining districts: Livingston, 4.
 Mud Lake area: Stearns, 9.
 north central: Thomson, F. A., 3.
 Orofino area: Kirkham, 11.
 Owyhee County, South Mountain district: Sorenson, 1.
 Pend Oreille district, granodiorites: Gillson, 6.
 Pine Creek district: Jones, Edw. L., 4.
 Rocky Bar quadrangle: Ballard, 4.
 Salmon River Mountains: Ross, C. P., 13.
 Seven Devils district: Livingston, 3.
 Shoshone County: Umpleby, 3.
 Silver City region: Piper, 6.
 south central: Umpleby, 2.
 southeastern: Mansfield, G. R., 10, 29.
 Igneous intrusion, after-effects: Kemp, 12.
 Illinois, Hardin County: Weller, S., 1.
 Inclusions in magmas: Emmons, R. C., 1.
 Intrusive Triassic diabase, Goose Creek, Loudoun County: Shannon, 46.
 Kansas, Riley County: Moore, R. C., 7.
 Rose dome, Woodson County: Twenhofel, 23, 32.
 Kentucky, Cave in Rock quadrangle: Weller, 16.
 western: Currier, 2.
 Lanai: Wentworth, 15.
 Leeward Islands: Washington, 33.
 Lesser Antilles: Lacroix, 1.
 Louisiana, Cretaceous: Bramlette, 2.
 Richland Parish, nepheline basalt: Campbell, I., 1.
 Magmatic differentiation: Vogt, 1, 3.
 Maine, Kennebec River to Penobscot Bay: Perkins, E. H., 3.
 Mount Desert Island: Bascom, 1.
 Mount Kineo: Smith, E. S. C., 3.
 Ogunquit: Keeley, 2.
 Portsmouth Basin: Wandke, 2.
 Manitoba, Beresford Lake area: Wright, D. G. H., 2; Wright, J. F., 4.
 Bigstone and Fox Rivers area: Merritt, C. A., 4.
 Cross-Pipestone area: Alcock, 4.
 Flinflon area: Alcock, 15.
 Island Lake area: Wright, J. F., 12.

Igneous and volcanic rocks—Continued.

Manitoba—Continued.

- Knee Lake district: Bruce, 4.
 northern: Bruce, 5.
 Oiseau River area: Wright, J. F., 10.
 Oxford and Knee Lakes area: Wright, J. F., 11.
 Reed and Wekusko lakes region: Alcock, 3.
 Rice Lakes area: Wright, J. F., 3.
 Maryland, Elkton quadrangle: Bascom, 2.
 Harford County, serpentines: Johannsen, 14.
 western Piedmont: Jonas, 4.
 Massachusetts, Cape Ann: Warren, C. H., 2.
 Dracut norite stock: Fairbanks, 10.
 Essex County: Clapp, C. H., 1.
 Westfield, gabbroid diabase: Shannon, 6.
 Mexico, Aguascalientes, Asientos-Tepezala district: Anderson, G. E., 2.
 Chapala region: Palmer, R. H., 1.
 Chihuahua, Yoquivo district: Hall, C. W., 1.
 Coahuila, northern: Cummings, 2.
 Colima (part): Vivar, 4.
 El Oro and Tlalpujahua districts: Flores, 1.
 Guanajuato mining district: Wandke, 8.
 Guerrero: Bonillas, 1; Paredes, 1; Zumpango del Rio: Waitz, 2.
 Hidalgo, Atotonilco el Grande: Wittich, 10; El Chico: Wittich, 9.
 Hidalgo-Vera Cruz region: Palmer, R. H., 4.
 Lower California: Gálvez, 2; La Purisima region: Heim, 1; southern: Gálvez, 7.
 Michoacan, Morelia Valley: Camacho, 3.
 Minillas, Cerro Prieto, Pichagua, and Sierra de Ramírez: Bonillas, 2.
 northeastern: Staub, 1.
 Panuco oil field: Baker, C. L., 8.
 Puebla, San Juan de los Llanos: Wittich, 12.
 San Quintin volcanic field: Woodford, 6.
 Michigan, Presque Isle, peridotite: Creveling, 1.
 Minnesota, Cook County, sulphide diabase: Schwartz, 12.
 Giants Range batholith: Allison, I. S., 1.
 granite and gabbro intrusions of Ely greenstone: Schwartz, 7.
 Gunflint district: Broderick, 3.
 Kekequabic granite: Stark, 1.
 Pigeon Point: Grout, 27.
 St. Louis County, northern: Grout, 20.
 Vermilion batholith: Grout, 18.

Igneous and volcanic rocks—Continued.

- Montana, Beartooth Mountains, Bevan, 2.
 faulted area south of Bearpaw Mountains: Reeves, F., 8.
 Melrose phosphate field: Richards, R. W., 2.
 Sweet Grass Hills: Kemp, 8.
 Mt. Pelé: Shepherd, 5.
 Nevada, Candelaria district: Knopf, A., 5.
 Divide district: Knopf, A., 3.
 Gilbert district: Ferguson, H. G., 10.
 Jarbidge district: Schrader, 5.
 Manhattan district: Ferguson, H. G., 2, 5.
 Mineral County, Cedar Mountain: Knopf, A., 4.
 Pioche district: Westgate, 6.
 Rochester district: Knopf, A., 7.
 Round Mountain district: Ferguson, H. G., 4.
 Santa Fe district, Mineral County: Clark, C. W., 2.
 New Brunswick, Burnthill Brook area: Young, G. A., 1.
 Dalhousie area: Howard, W. V., 2.
 Newfoundland, Notre Dame Bay: Sampson, 8.
 southeastern: Buddington, 3.
 west coast: Brunton, 3.
 New Hampshire, Ammonoosuc district: Ross, C. P., 2.
 Hanover district: Merritt, J. W., 3.
 Portsmouth Basin: Wandke, 2.
 White Mountains, North Conway quadrangle: Billings, 5.
 New Jersey, Beemerville: Auroousseau, 1.
 New Mexico: Darton, 26.
 Mogollon district: Ferguson, H. G., 3, 8; Scott, D. B., 1.
 northeastern: Garrett, 1.
 Pecos Valley: Semmes, 4.
 Puertecito district: Wells, E. H., 2.
 Raton-Brilliant-Koehler area: Mertie, 9.
 Sandia Mountains: Ellis, R. W., 2.
 Taos Range: Gruner, 1.
 Taylor Creek district: Hill, J. M., 3.
 Tyrone district: Paige, 2.
 New York, Adirondack gabbros: Gillson, 10.
 Adirondacks: Alling, 3.
 Ausable quadrangle: Kemp, 23.
 Gouverneur quadrangle: Cushing, 1.
 Ithaca: Martens, 1, 3.
 Lake Bonaparte quadrangle: Smyth, 2.
 Lake Clear region: Alling, H. L., 1.
 Lewis County: Buddington, 2.
 Luzerne quadrangle: Miller, W. J., 19.
 Lyon Mountain quadrangle: Miller, W. J., 26.
 Mount Marcy quadrangle: Kemp, 7.

Igneous and volcanic rocks—Continued.

- New York—Continued.
 southeastern: Colony, 3.
 West Point quadrangle: Berkey, 3.
 North Carolina, Deep River region: Stuckey, 1.
 Nova Scotia, North Mountain, Cape Breton: Guernsey, 2.
 Richmond County, Stirling area: Weeks, L. J., 1.
 Oahu: Wentworth, 22.
 Oklahoma: Gould, 9.
 Arbuckle Mountains: Taff, 7.
 Cimarron County: Rothrock, 4;
 Black Mesa basalt: Shead, 5.
 southern Ouachita Mountains: Honess, C. W., 4.
 Wichita Mountains: Taff, 7.
 Olivine bombs near Globe, Arizona: Lausen, 5.
 Ontario, Batchawana area, District of Algoma: Moore, E. S., 19.
 Brocktown-Mallorytown area: Wright, J. F., 2.
 Cochrane district: Hawley, J. E., 3.
 Kirkland Lake area: Burrows, 4, 12;
 Todd, 8; Lebel and Gauthier townships: Hopkins, 7.
 Lake St. Joseph area: Bruce, 8.
 Matabitchuan area: Todd, E. W., 5.
 Matachewan district: Cooke, H. C., 1.
 Michipicoten district: Collins, W. H., 1, 15.
 Missinaibi area: Thomson, E., 11.
 north shore of Lake Huron: Collins, 11.
 Red Lake area: District of Patricia: Bruce, 12.
 Red Lake gold area, District of Kenora: Bruce, 22.
 Sault Ste. Marie, District of Algoma: McConnell, 1.
 Sudbury district: Bain, 5, 18; Phemister, 4.
 Sutton Lake area: Hawley, J. E., 1.
 Timiskaming district, Abitibi-Night Hawk gold area: Knight, C. W., 1;
 Argonaut mine: Cooke, H. C., 13;
 Larder Lake area: Cooke, 11;
 Redstone River area: Bruce, 19.
 Oregon: Smith, W. D., 1.
 Cornucopia, inclusions in porphyry dikes: Goodspeed, 1.
 Glass Buttes, Lake County: Waters, A., 2.
 Mount Jefferson: Hodge, E. T., 6.
 Riddle quadrangle: Diller, 12.
 southeastern: Smith, W. D., 14.
 Panama Canal Zone: MacDonald, 5.
 Pennsylvania, Indiana County, peridotite dike: Honess, A. P., 4.
 Lebanon County, Ordovician: Gordon, S. G., 3.
 McCalls Ferry quadrangle: Jonas, 2.
 New Holland quadrangle: Jonas, 5.

Igneous and volcanic rocks—Continued.

Pennsylvania—Continued.

Ordovician : Stose, 29.

Quarryville quadrangle : Jonas, 3.

Porto Rico : Berkey, 1.

Coamo-Guayama district : Hodge, E. T., 1.

Humacao district : Fettke, 5.

Lares district : Hubbard, B., 3.

Ponce district : Mitchell, 7.

San Juan district : Semmes, 1.

Quantitative mineralogical and chemical classification : Hodge, E. T., 4, 11.

Quebec, Abitibi County, Duparquet and Destor townships : Buffam, 1.

Arnprior-Quyon area : Wilson, M. E., 10.

Beauceville area : MacKay, B. R., 4.

Coleraine area : Knox, J. K., 1.

Dufresnoy area, Abitibi district : Harvie, 3.

Duparquet area : James, W. F., 1.

Gaspe County, Lemieux Township : Alcock, 14; Mailhiot, 1.

Harricanaw-Turgeon basin : Tanton, 1.

Lake David area : Mawdsley, 5.

La Motte and Fournière areas, Abitibi County : James, 5.

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- Athâpapuskow Lake district : Bruce, 1.
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- Bibliographies: Lindgren, 25.
- Borderland of astronomy and geology: Eddington, 1.
- Colloids in geologic problems: Hubbard, G. D., 2.
- Composition of geological literature: Wentworth, 30.
- Continents and oceans, origin: Wegener, 1.
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- Microscope and the decadence of geology: Cady, 10; Eng. and Min. Jour.-Press, 3; Joralemon, 1.
- Microscope in geology: Waldschmidt, 7.

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- Oil geology and science : Heald, 13.
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- Publication for geological abstracts : Tilley, 1.
- Publishing geological information : Geijer, 3.
- Quantitative studies : Hubbard, G. D., 9, 10, 11.
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- St. Francis dam disaster : Longwell, 17 ; Louderback, 9.
- Scientific by-products of applied geology : Smith, G. O., 10.
- Sources and tendencies in American geology : Barrell, 2.
- State geological surveys and economic geology : DeGolyer, 11.
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- Strategy of minerals : Smith, G. O., 2.
- Technical papers and their presentation : Knapp, A., 2.
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- United States Geological Survey as a civic institution during the war : Paige, 1.
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- Water resources : Beckman, 1.
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 - North Dakota: Leonard, A. G., 3.
 - Ohio, Clinton sand: Russell, W. L., 9.
 - Columbiana County: Stout, 5.
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- Oklahoma: Powers, 20; Shannon, C. W., 1; Shaw, 6; Snider, 1.
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 Sayre field, Beckham County: Birk, 1.
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- San Patricio County, White Point field: Wolf, 3.
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- Alkali deposits: Barbour, 1.
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- Conglomerate of Black Hills: Cook, H. J., 4.
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- Agate fossil quarry, Sioux County: Matthew, 25; Peterson, 3.
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- Blastomeryx marshi : Lull, 10.
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- Fulgurites : Anderson, A. E., 1 ; Barbour, 4.
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- Badlands : Darton, 9.
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- Candelaria silver district : Knopf, A., 5.
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- Borax : Foshag, 20 ; Keyes, 61.
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 Dumortierite deposit : Jones, J. C., 3.
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Virgin Valley opal deposits: Gordon, C. C., 1.

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- Eastern New Hampshire: Crosby, I.
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- Belleville copper mine: Black, G. F., 2.
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- Banded postglacial clay near New York City: Reeds, 3.
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- Atlantic City region: Thompson, D. G., 6.
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- Canadian River area: Yeo, 1.

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- Brilliant quadrangle: Lee, W. T., 6.
- Carlsbad irrigation project: Meinzer, 16.
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- Sandia Mountains: Ellis, R. W., 2.
- Tyrone district: Paige, 2.
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- Aztec mine, Baldy, Colfax County: Chase, C. A., 1.
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- Salt deposits: Darton, 8; Phalen, 1.
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- Santa Rita district: Rickard, 8.
- Taylor Creek tin deposits, Sierra and Socorro counties: Hill, J. M., 3.
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- Abo sandstone: Böse, 4.
- Alamosa Creek valley, Socorro County: Winchester, 3.
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- Chupadera Mesa: Keyes, 72.
- Eastern New Mexico: Baker, C. L., 1; Lee, W. T., 3; Rich, 5.
- El Vado dam site, Rio Arriba County: Wells, E. H., 3.
- Folsom, Union County: Cook, H. J., 12.
- General: Keyes, 11, 14; Knox, J. K., 2.
- Geologic map: Darton, 25; Ellis, R. W., 5.
- southeastern New Mexico: Anon., 58.
- Geologic structure of parts of New Mexico: Darton, 11.
- Guadalupe group: Darton, 19.
- Laramie hiatus, southern Rocky Mountains: Keyes, 147.
- Manzano group: Lee, W. T., 2.
- Mogollon district: Ferguson, H. G., 3.
- Northeastern New Mexico: Baldwin, 1; Garrett, 1.
- Paleozoic: Keyes, 76.
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- Puertecito district: Wells, E. H., 2.
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- Rio Grande region, Carboniferous: Keyes, 68.
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- Arsenopyrite, Tres Hermanas Mountains: Smythe, 1.
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- Raton-Brilliant-Koehler area: Mertie, 9.

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- Buttress structure, volcanic plugs: Branson, 20.
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- Ancestral Rocky Mountains: Melton, 1.
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- Cactus Flat reservoir site: Nye, 1.
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- Newtonite, identity with alunite: Foshag, 25.

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- General: Palmer, E. L., 1.
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- Allegany State Park: Lobeck, 8.
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- Schroon Lake quadrangle: Miller, W. J., 2.
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- Adirondack magnetic iron ores: Miller, W. J., 13, 18; Newland, 1.
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- Adirondack gabbros, age: Gillson, 10.
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- Devonian, western New York: Husakof, 1.
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 Geological history: Miller, W. J., 23.
 Graptolite zones: Ruedemann, R., 3.
 Grenville stratigraphy, eastern Adirondacks: Alling, 13.
 Hanover shale: Chadwick, 4.
 Highlands, southeastern New York: Colony, 3.
 Lake Bonaparte-Lowville quadrangles: Buddington, 2.
 Marine Pleistocene fossils, New York City: Palmer, K. V. W., 3.
 Oriskany sandstone: Eaton, H. N., 3.
 Pinnacle Hills, Rochester: Fairchild, 13.
 Pleistocene history: Fairchild, 9.
 Portage stratigraphy, western New York: Chadwick, 3.
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 Salina formation: Newland, 9.
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 Contact minerals, Edenville: Buerger, 2.
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- St. Lawrence, Jefferson, and Lewis counties: Agar, 1.
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 Sterlingbush calcite cave: Clarke, N. T., 1.
 Sulphate minerals from weathering of shale near Ithaca: Martens, 6.
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- Armstrongia, Devonian glass sponge: Clarke, J. M., 8.
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 Glass sponges: Clarke, J. M., 18.
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 Trenton fauna, Martinsburg: Clarke, T. H., 1.
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 Vernon shale fauna: Eaton, H. N., 5; Ruedemann, R., 2.

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- Adirondack gabbros, age: Gillson, 10.
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- Adirondacks, western: Agar, 1.
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 Faulting, Cayuga Lake region: Long, 1.
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 Grenville sediments: Alling, 13.
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Glacial ice sheet, eastern New York, disappearance: Cook, J. H., 1.

Glacial lake, Warrensburg: Miller, W. J., 25.

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Niagara River gorge, age: Johnston, W. A., 26.

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- Pennsylvania, Lancaster Gap mine :
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- Night Hawk Lake gold area, Ontario : Hop-
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- Nipigon-Schreiber district, Ontario : Tanton,
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- Nitrate deposits, Amargosa region, south-
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- Atchison shales : Keyes, 287.
- Aulacera : Schuchert, 2.
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- Biostratigraphic terms : Fenton, C. L.,
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- Carboniferous : Keyes, 275.
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- Symbols for dip and strike : Dreher, 2.
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- Soils, age : Cobb, W. B., 1.
- State geologist, reports : Pratt, J. H.,
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- Fort Caswell : Stearns, N. D., 1.
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- Brown hematite ores, western North
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- Hydromica: Bayley, 1.
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- Limestones and marls: Loughlin, 9.
- Magnetite ores, western North Carolina: Bayley, 2, 6, 7; Pratt, J. H., 6.
- Magnetite-marble ore, Lansing: Bayley, 4.
- Magnetites, origin: Bayley, 3.
- Mineral industry: Bryson, 1, 2; Drane, 3; Pratt, J. H., 2.
- Mineral resources: Drane, 1.
- Nickel silicates, Webster, origin: Ross, C. S., 25.
- Oil shales, Deep River valley: Vilbrandt, 2.
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- Pyrophyllite deposits, Deep River region: Stuckey, 1, 3, 5.
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- Triassic coal field: Pratt, J. H., 5.

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- Boring near Havelock: Mansfield, W. C., 5.
- Castle Hayne and Trent marls: Kellum, 2.
- Cretaceous: Stephenson, 4.
- General: Bryson, 3.
- Great Smoky Mountains: Glenn, 9.
- Lower Cambrian, southern Appalachians: Barrell, 8.
- Permian at base of Newark: Cobb, 2.
- Pleistocene: Berry, 75.
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- Trent marl, age: Kellum, 1.
- Triassic, Durham Basin: Prouty, 15, 16.

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- Chloritoid, Deep River region: Stuckey, 1.
- Corundum: Cobb, M. C., 1.
- Corundum Hill (Franklin), Macon County: Gordon, S. G., 8.
- Cyanite: Seagle, 1.
- Genthite, so-called, Webster: Ross, C. S., 14.
- Hiddenite, Alexander County: Davidson, S. C., 1.
- Hydromica: Bayley, 1.
- Meteorite, McDowell County: Merrill, 34.
- Nickeliferous vermiculite and serpentine, Webster: Ross, C. S., 16.

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- Castle Hayne and Trent marls: Kellum, 2.
- Cretaceous: Stephenson, 4, 9.
- Decapod Crustacea, Upper Cretaceous: Rathbun, 3.
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- Horse remains: Cobb, C., 3.
- Mesozoic flora: Berry, 20.
- Miocene Mollusca: Mansfield, W. C., 7.
- Pleistocene plants: Berry, 75.
- Pliocene and Pleistocene: Mansfield, W. C., 6.

Petrology.

- Dunite, Jackson County: Adams, L. H., 8.

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- Appalachian structure: Prouty, 17.
- Ocean inlets, storm effect: Hite, 1.
- Shore changes, Cape Hatteras: Rude, 1.
- Triassic (Deep River) basin: Prouty, 12.

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- Blue Ridge: Wright, F. J., 2, 5.
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- Bibliography: Winchester, 5.
- California, Santa Barbara: Gore, 1, 2.
- Canada: Ells, 3, 7.
- Colorado: Alderson, 4; Chase, R. L., 1; George, R. D., 2.
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- Oil supply of United States: U. S. G. S., 8.
- Oiseau River area, Manitoba: Wright, J. F., 10.

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- Drillite: Shead, 4.
- Deep-well temperature investigation: Gould, C. N., 32.
- General: Gould, C. N., 31.
- Geologic problems unsolved: Gould, C. N., 20.
- Oklahoma Geological Survey, seventh field conference: Gould, 17.
- Ouachita Mountains: Honess, C. W., 3.
- Petroleum geology, history: Powers, 20.
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- Building materials: Oakes, 1.
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- Fox and Graham oil and gas fields, Carter County: George, H. C., 2.

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- Morrison oil field, Pawnee County: Carpenter, E., 1.
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- Natural gases, chemical survey: Allen, H. C., 1.
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- Oil and gas development: Shannon, C. W., 1.
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- Road materials, western Oklahoma: Evans, O. F., 7.
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- Osage Reservation: Bowen, C. F., 3; Goldman, 2-4; Heald, 1-4; Hopkins, O. B., 1; Robinson, H. M., 1, 2; Ross, C. S., 2; Roundy, 1.
- Ouachita Mountains, southern: Honess, C. W., 1.
- Paleogeography: Wilson, R. A., 8.

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- Shiningtree silver area, District of Timiskaming: Langford, 1.
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- Sudbury district, Grassy River area: Gledhill, 5.
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- Favourable Lake area, Patricia: Hurst, 5.
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- Siderite deposits, Mattagami River: Cross, J. G., 2.
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- Silver ores, Cobalt, genesis: Bastin, 6, 12.
- Gowganda area: Burrows, 3, 6.
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- Wasapika gold area, Sudbury district: Hore, 1-5.
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- Alluvial fan deposits in Upper Huronian: Bain, 3.

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- Cobalt and South Lorrain silver areas: Knight, 11.
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- James Bay region: Savage, 2.
- Keewatin iron formations: Collins, 23.
- Keweenawan system, eastern end of Lake Superior: Moore, E. S., 18.
- Killarney gneisses and migmatites: Quirke, 22.
- Kirkland Lake gold area: Todd, 8; Tyrrell, 7.
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- Lightning River gold area: Knight, C. W., 9.
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- Matachewan series, northeastern Ontario: Miller, W. G., 6.
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- Pagwachuan, Kenogami, and Albany rivers: Williams, M. Y., 10.
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- Paleozoic and pre-Cambrian relationships, southern border of Laurentian Highlands, Wilson, M. E., 7.
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- Pleistocene, Toronto region: Coleman, 19.
- Porcupine area: Bell, J. M., 8.
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- northern Ontario: Bruce, 7; Cooke, H. C., 16.
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- Pre-Cambrian glaciation: Coleman, 13.
- Red Lake district, Patricia: Dowling, 18.
- Red Lake and Woman Lake gold areas: Bruce, 23.
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- Shebandowan nickel deposit: Cross, J. G., 1.
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- Foraminifera, classification: Cushman, 28.
- Fossil, use of term: Field, 3, 4; Miller, A. M., 7, 8.
- Fossil marine faunas as indicators of climate: Kirk, E., 10.
- Fossil plants as evidence for resistance to environment: Wieland, 14.

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- Fossils, separation by heavy liquids: Hanna, M. A., 4.
- Fossils and life: Bather, 4.
- Fossils as age markers: Price, G. M., 2.
- Fossils from wells: Schenck, 4.
- General: Bather, 3; Buwalda, 13; Diamond, 1; Manson, 1; Matthew, 19; Merriam, 20; Parks, 31; Peabody Mus. N. H., 1; Shimer, 4; Smithsonian Inst., 1; Stock, 18; Wieland, 21; Woodring, 16.
- Great Basin and Pacific regions: Merriam, 12.
- History of life: Matthew, 39.
- Invertebrates, inorganic constituents: Clarke, F. W., 2.
- John Day region: Merriam, 14.
- Journal of Paleontology: Hanna, M. A., 8.
- Marking of type specimens: Howell, B. F., 10.
- Marine invertebrate faunas, distribution: Schuchert, 18.
- Micro-fossils in correlation: Schuchert, 24.
- Origin of oldest fossils: Brooks, W. K., 1.
- Origin of species: Osborn, 38.
- Orthogenesis: Osborn, 17.
- Ozarkian system: Walcott, 7.
- Pacific region: Merriam, 10.
- Paleontologic studies, practical value: Berry, 24.
- Paleontological researches in Pacific region: Merriam, 16.
- Paleontology and human relations: Weller, 18.
- Paleozoic, late: Case, E. C., 2.
- Parasitic disease: Bather, 2.
- Parasitism: Clarke, J. M., 16.
- Petrification of wood: St. John, 1.
- Photographing fossils: Mehl, 8.
- Place of paleontology among the sciences: Clark, J. M., 6.
- Prehistoric evidence: Frick, 2.
- Present tendencies in paleontology: Berry, 9.
- Progress of life: Keyes, 28.
- Progress on Pacific coast: Merriam, 7.
- Prototypes: Troxell, 6.
- Rectifications of nomenclature of Mollusca: Hanna, G. D., 13.
- Repopulation of sea bottoms: Sardeson, 24.
- Researches in western States: Merriam, 10.
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- Silurian faunal facies in juxtaposition: Ruedemann, 20.
- South American faunas, origin: Loomis, 5.
- Species, nature of: Troxell, 6.
- Statistical identification: Frost, 1.
- Symbiosis: Clarke, J. M., 16.

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Alberta, trilobites: Raymond, 36.

Algae, Middle Cambrian: Walcott, 1.

Arthropods: Henriksen, 1.

Brachiopoda: Walcott, 8.

Belt fauna: Rothpletz, 1.

British Columbia, Marpolia: Walton, 1.

California, Bristol Mountain: Resser, 6.

Mohave Desert: Clark, C. W., 1.

Chordates, Vermont: Bryant, 6.

Greenland, northwestern: Poulsen, 1.

Iowa, St. Lawrence limestone, Trilobita: Walter, 1.

Maine, Oldhamia: Smith, E. S. C., 5.

Maryland: Bassler, R. S., 1.

Massachusetts, Boston area: Clark, T. H., 10.

Montana, Helena region: Rothpletz, 1.

Nevada, Silver Peak district, trilobites: Walcott, 5.

New Brunswick: Howell, 8.

Newfoundland, Paradoxides faunas, Manuels Brook: Howell, 4.

Olenellus getzi, antennae: Dunbar, 9.

Quebec, Levis: Clark, T. H., 11.

Spongiae, British Columbia: Walcott, 2.

Stromatocystites, Newfoundland: Schuchert, 3.

Trilobites: Walcott, 15.

Vermont, northwestern, trilobites: Raymond, 23.

Carboniferous.

Alabama: Butts, 8.

Mississippian conodonts: Holmes, G. B., 1.

Alberta, Banff area: Warren, P. S., 4.

Crowsnest Pass: Warren, P. S., 7.

Lake Minnewanka section: Shimer, 6.

Nordegg, Kinderhook fauna: Warren, P. S., 1.

Algal deposits: Twenhofel, 3.

Annularia with Paleostachya fruit, Rhode Island: Round, 3.

Arizona, Grand Canyon, Hermit shale flora: White, D., 34.

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Arkansas, Fayetteville formation, sharks: Croneis, 4.

Bend series, central Texas: Moore, R. C., 1.

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Chester series: Ulrich, 5.

Bryozoa, Illinois and Kentucky: McFarlan, 1.

Colorado, Pennsylvanian sandstones, footprints: Henderson, J., 5.

western, Pennsylvanian Crinoidea: Keyte, 1.

Conodonts: Ulrich, 13.

Environmental conditions of Permian vertebrates: Case, 15.

Foraminifera, Pennsylvanian, Oklahoma and Texas: Harlton, 3.

Idaho, southeastern: Girty, 10.

Illinois, Galesburg: Jelliff, 1, 3.

Harrisburg, flora: Noé, 11.

northern, Pennsylvanian flora: Noé, 6.

northwestern, Pennsylvanian: Wanless, 5.

Pennsylvanian marine faunas: Savage, 11.

Pennsylvanian plants, structure: Hoskins, 2.

plants, structure: Hoskins, 4.

Richland County, coal flora: Reed, F. D., 1.

Stonefort limestone, Fusulinella: Henbest, 1.

Indiana, Crawfordsville, crinoid occurrence: Ehrenberg, 1.

Orange County, Chester formations: Hole, 2.

Porter County, scorpion: Moore, J. I., 1.

Iowa, Des Moines: Thomas, 18.

Fort Dodge, Ste. Genevieve marls: Lees, 4.

Mississippian: Van Tuyl, 8.

southwestern: Smith, G. L., 1.

Kansas: Moore, R. C., 4.

ophiacodont reptile, Permian: Romer, 4.

Permian Insecta: Carpenter, F. M., 1; Tillyard, 5-11.

Kentucky, eastern, Mississippian: Butts, 3.

Kendrick shale: Jillson, 9.

Pottsville faunas: Jillson, 53.

western, coal field flora: Noé, 3.

Warsaw formation, Anisotrypa: Deiss, 1.

Wayne County, Warsaw formation, brachiopods: Ehlers, 11.

Mackenzie, Kinderhook: Hume, 6.

Maryland, Cantheliophorus: Bassler, 12.

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Mexico, Coahuila, Permian: Haack, 1.

Peregrina Canyon: Girty, 9.

Michigan, Grand Ledge: Kelly, W. A., 1.

Mississippian faunal zones: Weller, 12.

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- Missouri, Henrietta formation, ostracodes: Knight, J. B., 1.
 Henry County, coal floras: Round, 5.
 Mississippian: Moore, R. C., 41.
 upper Devonian and lower Mississippian faunas, relationship: Branson, 8.
 Nebraska, Pennsylvanian, Fusulinidae: Dunbar, 11.
 New Mexico, Abo sandstone, ammonoids: Böse, 4.
 Nova Scotia, Horton-Windsor district: Bell, W. A., 2.
 Ohio, Dunkard series: Stauffer, 1.
 Oklahoma, Carter County, Dornick Hills formation, Foraminifera: Waters, J. A., 1.
 Glenn formation: Girty, 5; Foraminifera: Harlton, 2.
 Pennsylvanian foraminifers: Galloway, J. J., 13.
 Pennsylvanian ostracodes: Coryell, 3; Harlton, 1, 4; Roth, 3.
 Permian amphibian: Mehl, 15.
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 Seminole County ostracodes: Coryell, 4.
 Stanley shale: Honess, C. W., 2.
 Stonewall quadrangle: Morgan, G. D., 5.
 Sycamore limestone: Cooper, 1.
 Ostracoda, Pennsylvanian, Oklahoma and Texas: Harlton, 1, 4.
 Paleozoic, late: Case, E. C., 2.
 Paleozoic angiosperm, Illinois: Noé, 5.
 Pennsylvania, Broad Top coal field, Pocono fauna: Girty, 12.
 Calamites, East Bellevue: Grier, 1.
 Pittsburgh: Leighton, H., 2.
 Permian: Beede, 7; White, D., 17.
 Permian tetrapods: Case, 20.
 Permo-Carboniferous ammonoids, Glass Mountains, Texas: Böse, 1.
 Pocono Brachiopoda: Price, W. A., 2.
 Pottsville fauna, Ohio: Morningstar, 1.
 Rhode Island, coal floras: Round, 5.
 Schwagerina: Beede, 9.
 Texas, Burkburnett: Glenn, 2.
 Canyon formation, Fistulipora: Link, 6; Foraminifera: Waters, J. A., 2.
 northern: Moore, R. C., 15.
 Pennsylvanian foraminifers: Cushman, 42.
 Pennsylvanian ostracodes: Harlton, 4.
 Permo-Carboniferous red beds: Romer, 13.
 San Saba County, Mississippian: Girty, 7; Roundy, 3.
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 Sutton County, Carboniferous Foraminifera: Cushman, 45.
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- West Virginia, Mercer, Monroe, and Summers counties: Girty, 8.
 Mineral and Grant counties: Reger, 7.
 Mississippian: Girty, 4.
 Nicholas County: Price, W. A., 7.
 Permian vertebrates: Tilton, 10.
 Webster County: Price, W. A., 1.
 Wyoming, Tensleep formation: Brainard, 2.
Cretaceous.
 Alabama: Stephenson, 5.
 Hymenaea: Berry, 5.
 Alberta, Birch Lake sandstone marine fauna: Warren, P. S., 3.
 cichlid fish: Jordan, D. S., 18.
 Colorado shale: Warren, P. S., 8.
 Edmonton formation, Red Deer River: Sternberg, C. M., 7; Warren, P. S., 3.
 dinosaur: Parks, 19, 26; Sternberg, C. M., 10.
 Edmontosaurus: Lambe, 1.
 Laosaurus: Gilmore, 20.
 Paskapoo formation, Mollusca: Russell, L. S., 1; plants: Berry, 73, 74.
 Pelecypoda: McLearn, 3, 5.
 Aralias: Fritel, 1.
 Arizona, Ostrea: Reagan, 18.
 Steamboat, Mancos-Dakota-Tununk formation: Reagan, 19.
 British Columbia, Cassiar district, plants: Bell, W. A., 14.
 California, Gastropoda: Stewart, R. B., 1.
 Santa Ana Mountains: Packard, 4.
 Cannonball fauna: Stanton, 3, 6; corals: Vaughan, 9.
 Carolinas, invertebrates: Stephenson, 9.
 Cheyenne sandstone flora, Kansas: Berry, 37.
 Colorado, Mollusca: Reeside, 17.
 northeastern: Henderson, J., 1.
 Colorado group, Montana: Reeside, 6.
 Coloradoan: McLearn, 10.
 Cuba, oyster: Raymond, 31.
 rudistids: Sánchez Roig, 15.
 Dakota, so-called, Colorado and Wyoming: Reeside, 6.
 Dakota flora, age: Berry, 23.
 Dakota sandstone problems: Stanton, 5.
 Didymotis trinidadensis, Lower Cretaceous, Trinidad: Sommermeier, 1.
 Dinosaurs, Red Deer River: Sternberg, C. H., 1.
 Eagle sandstone, cephalopods: Reeside, 12.
 Fish scales: Cockerell, 1.
 Gulf region: Berry, 4.
 Greenland, plants: Seward, 3.
 western, plants: Seward, 4.
 Haiti: Woodring, 5.

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- Jamaica : Trechmann, 5, 8.
 crab : Withers, 1, 8.
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 Echinoidea : Hawkins, H. L., 1, 2.
 Kansas : Moore, R. C., 4 ; Twenhofel, 17.
 fishes : Jordan, D. S., 14.
 Martinichthys : McClung, 1.
 Niobrara beds, Anguillavus : Martin, H. T., 1.
 Niobrara cirriped : Withers, 5.
 Manitoba, Foraminifera : Cushman, 33.
 Maryland, Federal Hill : Berry, 16.
 Upper Cretaceous, Ostracoda : Berry, E. Willard, 1.
 Mesozoic floras of North and South America : Knowlton, 1.
 Mexico, Coahuila, Turonian ammonite fauna : Böse, 3.
 Guerrero, Zumpango : Burckhardt, 1.
 Lower California : Anderson, F. M., 4.
 Lower Cretaceous : Burckhardt, 2.
 northern, ammonites : Böse, 9.
 San Felipe formation : Stanton, 4.
 southern, rudistids : Palmer, R. H., 7.
 Tamaulipas, rudistid shells : Stephenson, L. W., 1.
 Tampico Embayment area, Foraminifera : White, M. P., 1.
 Zacatecas, Durango, and Guerrero : Böse, 6.
 Morrison flora, Colorado : Knowlton, 4.
 New Mexico, San Juan County, Reptilia : Gilmore, 4.
 New York, Staten Island : Davis, W. T., 1.
 North Carolina : Stephenson, 4.
 decapod crustaceans : Rathbun, 3.
 Mesozoic flora : Berry, 20.
 Oklahoma, Cimarron County, Dakota sandstone plants : Noé, 9.
 Love County, Comanchean : Bullard, 1, 2.
 Marshall County : Bullard, 3.
 Oregon, Cretaceous pterosaurian : Gilmore, 40.
 ichthyosaurian : Merriam, 27.
 Pacific region, Mollusca : Reagan, 7.
 Plantae, catalog : Knowlton, 2.
 Porto Rico, Ponce district : Mitchell, 7.
 Ripley flora : Berry, 63.
 Scaphites, Upper Cretaceous : Reeside, 14.
 South Dakota, Badlands : Toepelmann, 1.
 Fox Hills formation, beetles : Northrop, S. A., 1.
 ganoid fish : Gregory, W. K., 11.
 Palmoxylon, Pierre formation : Stevens, N. E., 1.
 Ziebach County, boring : Stanton, 11.

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- Tennessee, Carroll County, plants : Berry, 104.
 Cretaceous flora : Berry, 28.
 late Cretaceous plants : Berry, 17.
 McNairy County, Hamulus : Wade, B., 2.
 Ripley fauna : Wade, 3.
 Texas : Adkins, 5 ; Scott, G., 2 ; Stanton, 13.
 ammonites : Scott, G., 6.
 Buda and Georgetown limestones, Turritella : Ellisor, 1.
 central, Foraminifera : Carsey, 1.
 Denton County : Winton, 3.
 Cooke County : Bybee, 3.
 Duck Creek formation, ammonites : Scott, G., 1.
 Exogyra : Böse, 2.
 Fredericksburg formation, ammonites : Scott, G., 5.
 Fredericksburg and Washita formations : Adkins, 1.
 micrology : Alexander, C. I., 1 ; Carpenter, M., 1 ; Mahon, 1 ; Moreman, 1.
 northern, recurrent brachiopods : Sandidge, 1.
 Pectinidae : Kniker, 1.
 southern, ammonites : Böse, 9.
 Tarrant County : Winton, W. M., 1.
 Weichselia : Berry, 95.
 Weno and Pawpaw formations : Adkins, 2.
 Trigoniae, Pacific coast : Packard, 3.
 Trinidad : Harris, G. D., 5.
 rudistids : Harris, G. D., 4.
 Trinity fauna : Vanderpool, 2.
 Utah, Mollusca : Reeside, 17.
 Washington, San Juan Islands : McLellan, 2.
 Woodbine flora, Arthurs Bluff, Texas : Berry, 36.
 Wyoming, Oregon Basin, Cody shale, Cephalopoda : Reeside, 13.
Devonian.
 Alabama : Butts, 8.
 Alberta, Banff area : Warren, P. S., 4.
 Brachiopoda : Kindle, 32.
 Crowsnest Pass : Warren, P. S., 7.
 Lake Minnewanka section : Shimer, 6.
 Peace River : Kindle, 47.
 Arctic regions, Ellesmere Land : Tolmachoff, 1.
 Arizona, Pinal Creek : Stauffer, 11.
 Bothriolepis, Scaumenac Bay, Quebec : Bryant, 3.
 Conodonts : Ulrich, 13.
 Devonaster eucharis (Hall), six-rayed : Willard, B., 2.
 Dolatocrinus and allies : Springer, 3.
 Ellesmere Land : Kirk, 4 ; Tolmachoff, 2.
 Floras : Berry, 91.
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Devonian—Continued.

- Illinois, Oriskany : Savage, 15.
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- Iowa, annelid jaws : Searight, 1.
Aulopora : Fenton, M. A., 1.
Brachiopoda : Thomas, 14.
echinoderms : Thomas, 12, 23 ; geo-
graphic distribution : Thomas, 16.
Hackberry fauna : Fenton, C. L.,
1, 3, 4.
Lime Creek shales : Thomas, 9.
Pentameracea : Belanski, 2.
Schizophoria : Fenton, M. A., 3.
Shellrock stage : Belanski, 3.
State Quarry beds : Stainbrook, 2, 3.
Mackenzie River valley, Crinoidea ;
Springer, 4, 14.
- Maine, Chapman sandstone : Raymond,
21 ; Ostracoda : Ulrich, 1.
- Michigan, Alpena, Cephalopoda :
Foerste, 23.
Crinoidea : Ehlers, 9.
cystid, Lipsanocystis : Ehlers, 6.
gastropod and cephalopod : Ehlers,
5.
southeastern, Hamilton fauna :
Ehlers, 12.
- Minnesota : Stauffer, 3.
- Missouri : Branson, 5.
Bailey limestone fauna : Tansey, 1.
central : Greger, 1.
Ste. Genevieve County, Little Saline
limestone : Stewart, G. A., 1.
upper Devonian and lower Missis-
sippian faunas, relationship :
Branson, 8.
- New York, Devonian crinoids : Gold-
ring, 4.
Eighteenmile Creek, Callixylon :
Hylander, 1.
Gilboa, plant material : Goldring, 7.
glass sponge : Clarke, J. M., 25.
Hamilton crinoids : Goldring, 8.
Hamilton group, Protobalanus : Van
Name, 2.
Oriskany fauna, Oriskany Falls,
Eaton, H. N., 3.
plant localities : Arnold, C. A., 1.
plants : Petry, 1.
Portage group, conodonts : Hibbard,
R. R., 1.
seed fern forests : Goldring, 5.
Sherburne sandstone : Grabau, 6.
Vernon shale fauna : Ruedemann,
R., 2.
- Nova Scotia, Cephalopoda : Foerste, 27.
- Ohio, Cleveland shale, fishes : Hyde, 4.
Delaware County : Westgate, 5.
Silica shale fauna : Stewart, G. A.,
2.
- Ontario, James Bay region : Savage, 2.
Pisces : Hussakof, 1.
- Portage fauna, Mackenzie River val-
ley : Kindle, 4.
- Quebec, St. George : Clark, T. H., 9.

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Devonian—Continued.

- Starfish, Gaspe : Ruedemann, 23.
- Stringocephalus burtoni, distribution :
Kindle, 10.
- Tennessee, western : Dunbar, 1, 2.
- Terebratulacea, Iowa : Belanski, 4.
- Thread molds and bacteria : Moodie,
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- West Virginia, Hardy County : Tilton,
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ties : Prouty, 14.
Mineral and Grant counties : Re-
ger, 7.
Randolph County, trees : Reger, 15.
- Jurassic.*
- Alberta : McLearn, 13.
Fernie formation, Ammonoidea :
McLearn, 15 ; Pelecypoda : Mc-
Learn, 9.
- British Columbia : McLearn, 13.
Hazelton group : McLearn, 11.
Parson Bay : Crickmay, 9.
Cardioceratidae : Reeside, 1.
- Cuba, ammonite fauna : O'Connell, 3.
Viñales : Sánchez Roig, 1, 2.
western, fish fauna : Gregory, W.
K., 8.
- Mammalia : Simpson, G. G., 3.
- Mexico, Oaxaca and Guerrero, cepha-
lopods : Burckhardt, 3.
Zacatecas, Symon : Burckhardt, 1.
- Montana, Ellis formation, Lithotham-
nium : Howe, M. A., 4.
- Oregon, Mollusca : Hertlein, 2.
- Plantae, catalog : Knowlton, 2.
- Trigoninae, Pacific coast : Packard, 3.
- Trinidad, Northern Range : Trechmann,
7.
- Western North America : Crickmay, 5.
- Wyoming, Como Bluff, Quarry 9 :
Simpson, G. G., 11.
Apatodonosaurus : Mehl, 19.
- Ordovician.*
- Alabama : Butts, 8.
- Arctic Cephalopoda : Foerste, 11.
- Baffin Island, cephalopoda : Foerste, 29.
corals, brachiopods, gastropods, and
ostracodes : Hussey, 2.
- Beloit formation : Sardeson, 22.
Brachiopoda : Sardeson, 24.
- Black River Brachiopoda, Mississippi
Valley : Fenton, C. L., 5.
- British Columbia, Glenogle formation,
graptolites : Clark, T. H., 14.
- Rocky Mountains : Wilson, A. E., 4.
upper Ordovician, Palliseria : Wilson,
A. E., 3.
- Cephalopoda : Foerste, 17, 28.
- Ceratopyge fauna : Raymond, 16.
- Cincinnatian, recurrent faunas : Shide-
ler, 3.
- Trilobita : Foerste, 3.
- Colorado, Macluritella : Kirk, E., 8.
- Dolgeville fauna : Ruedemann, R., 3.

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Ordovician—Continued.

- Ellesmere Land : Kirk, 4.
 General : Jones, O. T., 1.
 Greenland, northern, *Cephalopoda* :
 Troedsson, 2.
 northwestern : Poulsen, 1.
 Hudson Bay area, *Cephalopoda* :
 Foerste, 22.
 Illinois, northeastern, Richmond fauna :
 Evans, J. R. C., 1.
 Thebes sandstone : Savage, 1.
 Indiana, Madison : McEwan, 2.
 Iowa, Maquoketa shale : Bradley, J. H.,
 jr., 1.
 Maquoketa faunas : Ladd, H. S., 4.
 Maquoketa depauperate fauna, Iowa :
 Ladd, H. S., 2.
 Maquoketa echinoderms : Slocum, 1 ;
 Thomas, 22.
 Kimmswick limestone, Missouri : Brad-
 ley, J. H., jr., 4.
 Maryland : Bassler, 13.
 Michigan, Escanaba River, Trenton,
 cystoids : Hussey, 3.
 Richmond formation : Hussey, 1.
 Minnesota, cephalopods : Sardeson, 17.
 Crinoidea : Sardeson, 16.
 problematic fossils : Sardeson, 18.
 Missouri, Kimmswick and Plattin
 limestones : Foerste, 9.
 Plattin formation : Fenton, C. L., 8.
 Nevada, sponge fauna : Bassler, 22.
 New York, graptolite zones : Ruede-
 mann, R., 3.
 Martinsburg, Trenton fauna : Clark,
 T. H., 1.
 Newburgh quadrangle : Holzwasser, 1.
 Utica and Lorraine formations : Rue-
 demann, 16-18.
 Northwest Territories, Great Slave
 Lake : Hume, 18.
 Ohio, Warren and Clinton counties :
 Austin, G. M., 1.
 Ontario : Foerste, 15.
 black shales : Parks, 32.
 Credit River section : Dyer, 3.
 Dundas formation : Parks, 17.
 Lake Timiskaming area : Hume, 14.
 Ottawa region : Wilson, A. E., 1.
 St. Lawrence Valley : Wilson, A. E.,
 2.
 Toronto area : Fritz, 1 ; Parks, 8, 9,
 18 ; Pelecypoda : Stewart, B. H., 1.
 Workman's Creek section : Fritz, 2.
 Pennsylvania, central : Field, R. M., 1.
 Platystrophia : McEwan, 1.
 Quebec : Foerste, 15.
 Anticosti Island : Twenhofel, 30 ;
 cephalopods : Foerste, 26.
 Levis. Beckmantown series : Clark,
 T. H., 11.
 Montreal, cephalopod : Clark, T. H.,
 16.
 Philipsburg region, Beckmantown tri-
 lobites : Bradley, J. H., jr., 3.

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Ordovician—Continued.

- Salterella, nature : Clark, T. H., 12.
 Snake Hill fauna : Ruedemann, R., 3.
 Stones River limestone : Coryell, 2.
 Strophomena, Black River and Rich-
 mond : Fenton, C. L., 9.
 Tennessee, Lenoir and Athens forma-
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 Ottosee and Holston formations,
 brachiopods : Willard, B., 5.
 Stones River group : Coryell, 2.
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 Trenton echinoderm faunas, distribu-
 tion : Foerste, 3.
 Trenton fauna, Ontario and Quebec :
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 Trilobita : Raymond, 6.
 Utica and Lorraine shales, faunal facies
 differences : Ruedemann, 22.
 Vermont, central : Richardson, C. H., 1.
 Chazy coral reef : Raymond, 24.
 Fort Cassin : Foyles, 3.
 Grand Isle : Ruedemann, 5.
 Grand Isle County : Perkins, G. H., 9.
 northwestern, trilobites : Raymond,
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 Alaska, Peard Bay region : Meek, 1.
 Pleistocene : Dall, 2.
 Arctic coast, Pleistocene : Dall, 9.
 Arizona, Lake Cochise area : Bryan, 23.
 Atlantic Coastal Plain, Pleistocene :
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 British Columbia, Vancouver Island :
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- California, Carpinteria asphalt pit: Hoffman, R., 1; Stock, 20.
 Los Angeles asphalt pits: Hay, 37.
 Los Angeles County, Pleistocene clam: Oldroyd, I. S., 1.
 Pleistocene, McKittrick asphalt deposit; Merriam, 9; llama: Merriam, 18; peccary: Stock, 23.
 Pleistocene, Arctotherium: Merriam, 17; Foraminifera: Galloway, J. J., 8; Mollusca: Oldroyd, T. S., 1; ruminant: Stock, 19; Tanupolama: Stock, 24.
 Rancho La Brea, flora: Frost, 2.
 Megalonychinae and Mylodontidae. Rancho La Brea: Stock, 13.
 Rancho La Brea, peccary: Merriam, 8; rodents and lagomorphs: Dice, 1.
 southern, Vertebrata: Frick, 1.
 Canada, Diatomaceae: Boyer, 1.
 Colorado, Yuma County, Pliocene Mammalia: Cook, H. J., 2.
 Echinoidea, west coast: Israelsky, 1.
 Ecology in the interpretation of fossil faunas: Baker, F. C., 7.
 Florida, age of Vero vertebrates: Hay, 36.
 Citrus County, Pleistocene mammals: Simpson, G. G., 26.
 Mammalia and Pisces: Hay, 1.
 Mollusca: Mansfield, W. C., 1.
 Pleistocene Physa: Clench, 1.
 Frankstown cave vertebrates, Blair County, Pennsylvania: Peterson, 9.
 Gulf States, Pelecypoda: Maury, 4.
 General: Hay, 31.
 Haiti, Balanus: Pilsbry, 3.
 Helicina occulta, Iowa: Shimek, 1.
 Illinois, loess, Alton: Baker, C. L., 2; Leighton, M. M., 5.
 Grundy County, Pleistocene Mollusca: Baker, F. C., 6.
 loess deposits, Mollusca: Baker, F. C., 13.
 Pleistocene Mollusca: Baker, F. C., 8, 9, 11, 12.
 Indiana, Pleistocene Mollusca: Baker, F. C., 3; Porter County: Lyon, 1.
 Iowa, Cherokee, Pleistocene: Cable, 8.
 Kansas, Pleistocene Bison: Martin, H. T., 5.
 Wallace County, Pleistocene Mollusca: Hanna, G. D., 5.
 Mammalian faunas, shifting: Adams, L. A., 2.
 Mammoth, Cheney, Washington: Freeman, O. W., 6.
 Maryland, Cumberland, Pleistocene peccaries: Gidley, 4.
 Wailes Bluff, Pleistocene Mollusca: Smith, E. R., 1.
 western: Gidley, 3.
 Massachusetts, bison remains: Allen, G. M., 1.

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Quaternary—Continued.

- Mexico, Lower California, Mollusca: Jordan, E. K., 1, 3; San Quentin Bay, Pleistocene: Orcutt, C. R., 1.
 Pleistocene Mammalia: Furlong, 1.
 Michigan, Oakland County, elephant: Sherzer, 2.
 Minnesota, Bison: Hay, 17.
 Mississippi, Pleistocene plants: Berry, 6.
 Mollusca, marl deposits, Ottawa district, Ontario: Whittaker, 1.
 Pleistocene: Maury, 5.
 Nebraska, Archidiskodon maibeni: Barbour, 7, 8.
 Elephas scotti: Barbour, 2.
 Giraffa nebrascensis: Matthew, 2.
 Tetrabelodon abeli: Barbour, 33.
 western, Pleistocene: Matthew, W. D., 2.
 New York, Pleistocene Mammalia: Hartnagel, 1, 4.
 New York City, Pleistocene: Palmer, K. V. W., 3.
 North Carolina, Pleistocene plants: Berry, 75.
 Ohio, Pleistocene Mollusca: Baker, F. C., 2, 3.
 Ontario, Pleistocene, crustacean: Kindle, 48.
 St. Lawrence Valley: Whittaker, 3.
 Toronto, muskox skull: Bensley, 1.
 Oregon, Pliocene bear: Merriam, 22.
 Plantae, catalog: Knowlton, 2.
 Pleistocene: Baker, F. C., 1.
 mammals: Hay, 45.
 Maryland, Virginia, and North Carolina: Mansfield, W. C., 6.
 mastodons: Hay, 32.
 middle region of North America: Hay, 23.
 Mollusca: Goldring, 3.
 plants: Berry, 88; Alabama and Tennessee: Berry, 34.
 Vertebrata: Hay, 4, 7, 8, 9, 15, 16, 24, 32, 39.
 Pleistocene faunas, distribution: Goldring, 1.
 Quebec, St. Lawrence Valley: Whittaker, 3.
 San Pedro fauna, Nob Hill cut, California: Oldroyd, T. S., 3.
 Tennessee, Pleistocene plants: Berry, 6.
 Texas, Dallas County: Shuler, 1; Mammalia: Lull, 8.
 Pleistocene fresh-water Mollusca: Hanna, G. D., 9.
 southwestern, Pleistocene vertebrates: Hay, 33.
 Vernon, Bison: Cook, H. J., 14.
 Trinidad, Pleistocene flora: Berry, 67.
 Utah, hairy mammoth: Hansen, 1.
 Veneridae, eastern America: Palmer, K. V. W., 5.
 Washington, Big Hope Island, Pleistocene: Henderson, J., 9.

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Silurian.

- Alabama: Butts, 8.
 Alaska, Bathmopterus: Kirk, 11.
 Cymbidium: Kirk, 5.
 Harpidium: Kirk, 3.
 Pycnodesma: Kirk, 6.
 Anticosti faunas: Jones, O. T., 1.
 Arctic Cephalopoda: Foerste, 11.
 Arkansas, St. Clair limestone: Thomas, N. L., 1, 2; brachiopoda: Thomas, N. L., 4; Trilobita: Foerste, 14.
 Cephalopoda: Foerste, 19, 28.
 Hudson Bay area: Foerste, 22.
 northern Michigan: Foerste, 16, 17.
 orthoconic: Foerste, 30.
 Crinoidea: Springer, 12.
 Echinodermata, Brassfield formation, Ohio: Foerste, 1.
 Illinois, northeastern, Gastropoda: Wing, 1.
 Orchard Creek shale: Savage, 1.
 worm, *Lecthaylus*: Weller, 9.
 Indiana, Jefferson County, Brassfield: Culbertson, J. A., 1.
 Niagaran: Shrock, 2.
 northern: Cumings, 5.
 Iowa, *Herpetocrinus*: Thomas, A. O., 4.
 Niagaran, *Bilobites bilobus*: Thomas, A. O., 25.
 Manitoba, Hudson Bay region: Savage, 2.
 Maryland: Swartz, C. K., 9.
 Massachusetts, Essex County: Foerste, 6.
 Michigan, Mackinac County, *Heterolasma*: Ehlers, 2.
 New York: Ruedemann, 19.
 adjacent faunal facies: Ruedemann, 20.
 Crustacea: Clarke, J. M., 4.
 new forms of life: Ruedemann, 7.
 salt deposits: Alling, 14.
 Vernon shale fauna: Eaton, H. N., 5.
 Northwest Territories, Great Slave Lake: Hume, 18.
 Nova Scotia, Arisaig area: McLearn, 8.
 Ohio: Foerste, 2.
 Cedarville, cystids and blastoids: Foerste, 10.
 Medinan fauna: Foerste, 14.
 Ontario, Hudson Bay region: Savage, 2.
 Lake Timiskaming area: Hume, 14.
 Timiskaming area, Cephalopoda: Foerste, 18.
 southwestern: Williams, M. Y., 1.
 Whirlpool sandstone: Foerste, 14.
 Quebec, Anticosti Island: Twenhofel, 30.
 St. Clair limestone, Arkansas and Oklahoma: Ulrich, 14.
 Trilobita: Foerste, 3.
 West Virginia, Hardy County: Tilton, 15.

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West Virginia—Continued.

- Mercer, Monroe and Summers counties: Prouty, 14.
 Mineral and Grant counties: Reger, 7.
 Wisconsin, Racine, cystids and blastoids: Foerste, 10.

Tertiary.

- Alabama: Cooke, C. W., 13.
 Eocene, foraminifer: Cushman, 19.
 Eocene Mollusca: Aldrich, T. H., 1.
 Alaska, Pliocene: Dall, 2; pectens: Dall, 3.
 Pribilof Islands: Dall, 1; Hanna, G. D., 1.
 Alberta, Paskapoo formation, *Catopsalis*: Russell, L. S., 2.
 Red Deer, Paskapoo beds, fish: Russell, L. S., 3.
 Alum Bluff group, molluscan fauna: Gardner, J. A., 7.
 Anguilla, Oligocene, decapod crustaceans: Withers, 4.
 Arachnida: Petrunkevitch, 1.
 Arctic regions, Brock River: Dall, 9.
 Arizona, Benson, bird remains: Wetmore, 5.
 San Pedro Valley, vertebrates: Gidley, 5; Proboscidea and Edentata: Gidley, 7.
 Artiodactyls: Lull, 4.
 Balanocrinus, West Indies: Springer, 8.
 Barbados, Callianassa, Scotland beds: Withers, 6.
 Scotland beds: Trechmann, 6.
 Brandon, flora: Berry, 8.
 Briones fauna, California: Trask, 2.
 British Columbia, Tertiary floras: Berry, 78.
 Vancouver Island, Sooke formation: Clark, B. L., 8; Cornwall, 1; Cirripedia: Cornwall, 2.
 Bryozoa: Canu, 5.
 later Tertiary: Canu, 4.
 Byram marl, Mississippi: Cooke, C. W., 7.
 Foraminifera: Cushman, 13.
 California, Channel Islands: Hertlein, 6.
 Coral: Vaughan, 45.
 Coyote Mountain: Hanna, 25.
 Desmostylus: Hannibal, 1.
 diatoms: Hanna, G. D., 31.
 Domengine horizon, middle Eocene: Clark, B. L., 16.
 echinoid: Schenck, 8.
 Foraminifera: Cushman, 29, 32.
 Vicksburg group: Cushman, 16.
 Gastropoda: Stewart, R. B., 1.
 Hipparion mohavense, Puente formation: Stock, 26.
 Kern County, Miocene marine vertebrates: Hanna, G. D., 20.
 La Jolla quadrangle: Hanna, M. A., 5.

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Tertiary—Continued.

California—Continued.

- Lompoc, humpback whale: Kellogg, R., 3; Miocene birds: Miller, L. H., 3.
- Los Angeles, Miocene algae: Gardner, N. L., 1.
- Martinez Eocene: Nelson, R. N., 2.
- Meganos fauna: Clark, B. L., 2, 18.
- Miocene fishes: Jordan, D. S., 15.
- Mohave Desert: Merriam, J. C., 1; *Alticamelus*: Davidson, P., 2; *Merycodus*: Furlong, 2.
- Monterey group, whale: Hanna, G. D., 15.
- Monterey shale: Hanna, G. D., 38; diatoms, Gaylord, 2.
- Petaluma, Point Reyes, and Santa Rosa quadrangles, Dickerson, 2.
- Pinnipeds: Kellogg, R., 2.
- Pliocene, canid and rhinocerotid remains: Stock, 16; Gastropoda: Carson, 2; pinniped: Kellogg, R., 1.
- Puente flora: Chaney, 4.
- Puente formation, Hipparion: Stock, 26.
- Rancho La Brea, birds: Miller, L. H., 2.
- Ricardo fauna: Stock, 25.
- San Lorenzo group: Wagner, C. M., 1.
- Santa Barbara County, Miocene fishes: Jordan, 12; physeteroid cetacean: Kellogg, R., 9.
- Sonoma County, Miocene lacustrine mollusks: Hanna, G. D., 7.
- southern, Miocene fishes: Jordan, D. S., 1, 17; Pliocene: Carson, 1; Vertebrata: Frick, 1.
- southern Coast Ranges, Vertebrata: Stock, 3.
- Tejon fauna: Anderson, F. M., 1.
- Temblor group, sharks: Jordan, D. S., 16; sperm whale: Kellogg, R., 15.
- Tertiary and Quaternary Foraminifera: Cushman, 34.
- Tesla region, Miocene flora: Scott, F. M., 1.
- Vacaville, Eocene: Palmer, D. B. K., 1.
- Vaqueros and Temblor formations: Wiedey, 1.
- Canada, Diatomaceae: Boyer, 1.
- Cannonball fauna: Stanton, 3; corals: Vaughan, 9.
- Caribbean region, Foraminifera: Vaughan, 21.
- Cassididae, western America: Schenck, 3.
- Cayman Islands, Foraminifera: Vaughan, 42.
- Chipola fauna in Marks Head marl: Gardner, J. A., 5.
- Chitons: Berry, S. S., 1.

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Tertiary—Continued.

- Colorado, birds, Oligocene: Wetmore, 12.
- Brown's Park formation: Peterson, 11.
- Eocene alga: Cockerell, 35.
- Eocene Insecta: Cockerell, 8.
- Florissant, Miocene insects: Cockerell, 36; beetles: Cockerell, 32; Orontium: Cockerell, 31; parasitic Hymenoptera: Cockerell, 4.
- Green River Eocene, plants and insects: Cockerell, 27.
- Huerfano formation, titanotheres: Osborn, 7.
- Hyopsodus, Eocene: Abel, 2.
- Insecta, Inocellia: Cockerell, 28.
- Moffat County, titanotheres, Eocene: Cook, H. J., 8.
- Palmoxylon, Denver formation: Stevens, N. E., 1.
- Pawnee Creek beds, Amphicyon: Cook, H. J., 9.
- rhinoceros, Oligocene: Gregory, W. K., 19.
- Costa Rica, Miocene Foraminifera and Mollusca: Palmer, K. V. W., 4.
- northern, Miocene: Olsson, 1.
- Plantae: Berry, 15.
- Cuba, cirriped, Miocene: Withers, 7.
- Miocene and Pliocene Squalidae: Sánchez Roig, 3.
- Dominican Republic: Vaughan, 16.
- Anthozoa: Vaughan, 37.
- decapods: Rathbun, 2.
- Mollusca: Pilsbry, 1.
- Plantae: Berry, 26.
- Early Tertiary Bryozoa: Canu, 2.
- Echinoidea: Stefanini, 1.
- west coast: Israelsky, 1.
- Eocene, Foraminifera, California: Hanna, G. D., 10.
- Eocene and Oligocene Mollusca: Cooke, C. W., 10.
- Eocene flora, trans-Pecos Texas: Berry, 12.
- Eutrophoceras, Eocene, South Carolina: Reeside, 9.
- Fishes, Eocene, Utah and Wyoming: Tanner, 1.
- Miocene, California: Jordan, 5.
- Florida, fresh-water mollusks: Marshall, W. B., 1.
- Miocene, Corbula: Gardner, J. A., 8; Foraminifera: Cushman, 9.
- Mollusca: Mansfield, W. C., 1.
- phosphate beds, Cetacea: Allen, G. M., 3.
- Foraminifera: Vaughan, 35.
- Coastal Plain wells: Applin, E. R., 1.
- Mint Spring marl: Cushman, 14.
- Fossils dredged off the northeastern coast of North America: Dall, 11.
- Great Basin and Great Plains faunas: Troxell, 13.

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Tertiary—Continued.

- Green River flora: Knowlton, 11.
 Green River formation, origin: Henderson, J., 6.
 Gulf States, Pelecypoda: Maury, 4.
 Haiti: Woodring, 5.
 Balanus: Pilsbry, 3.
 cichlid fish, Miocene: Cockerell, 16.
 Eocene Foraminifera: Woodring, 6.
 Mollusca: Woodring, 7.
 plants: Berry, 32.
 Hipparion, Siestan, California: Stock, 8.
 Hoplophoneus, South Dakota: Jepson, 2.
 Idaho, Latah flora: Knowlton, 16.
 Idaho formation, Snake River valley: Dall, 10.
 Insecta, Eocene: Cockerell, 3; Texas: Cockerell, 19.
 Rocky Mountains: Cockerell, 2.
 Jamaica, Bowden, Miocene mollusks: Woodring, 10, 22.
 decapod crustaceans: Withers, 2.
 Echinoidea: Hawkins, H. L., 2.
 Foraminifera: Vaughan, 46.
 Richmond formation: Trechmann, 4.
 Yellow limestone: Trechmann, 3.
 Kansas, Miocene, *Celtis*: Brooks, B. W., 1.
 Louisiana, Pliocene Mollusca: Smith, E. R., 2.
 Maryland, Calvert County, *Eurhinodelphis*: Kellogg, R., 11.
 Calvert Cliffs, Miocene whale: Kellogg, R., 7.
 Zarhachis, Calvert formation: Kellogg, R., 6.
 Miocene porpoise: Kellogg, R., 14.
 Mexico, echinoids, Neogene: Lambert, 2.
 Guayabal formation, Foraminifera: Cole, W. S., 1.
 Gulf of California, Pliocene: Hanna, G. D., 29.
 Lower California, Cedros Island and Turtle Bay: Jordan, E. K., 4; *pectens*: Hertlein, 1.
 Miocene: Hertlein, 4.
 Maria Madre Island, Miocene marine diatoms: Hanna, 27; Pliocene: Jordan, E. K., 2.
 Moctezuma River, Eocene fauna: Cushman, 21.
 southern, foraminifers: Nuttall, 2.
 Tehuantepec, Miocene: Berry, 39.
 Vera Cruz, Vicksburg Mollusca: Cooke, C. W., 18.
 Miocene fishes, California: Jordan, 6.
 Miocene plants, southern Mexico: Berry, 48.
 Mississippi, Eocene mollusks, Jackson: Cooke, C. W., 15.
 Mollusca, Eocene and Oligocene: Cooke, C. W., 10.

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Tertiary—Continued.

Mollusca—Continued.

- Miocene and Pliocene: Woodring, 9;
 Coastal Plain: Gardner, J. A., 4.
 Pliocene: Maury, 5.
 Montana, Eocene claeodonts: Gidley, 2.
 Fort Union formation, footprints: Gilmore, 41.
 Missoula region, plants: Jennings, 1.
 Paleocene primates: Gidley, 6.
 southern, Fort Union formation, Mammalia: Simpson, G. G., 21.
 Myadesma, Pacific coast: Clark, B. L., 6.
 Nebraska, Agate Springs, Miocene hawk: Wetmore, 9.
 avian Miocene and Pliocene fossils: Wetmore, 4.
 Brown County, longirostrine elephant: Cook, H. J., 16.
 Miocene birds: Wetmore, 7.
 Miocene Mammalia: Matthew, 35.
 Peltosaurus, Oligocene: Gilmore, 29.
 Prosthennops, peccary: Barbour, 3.
 Sioux County, birds: Wetmore, 13; hawk: Wetmore, 11.
 Nevada, Esmeralda formation, flora: Berry, 92.
 Fish Lake valley, *Hypohippus*: Stock, 17.
 Miocene walnut: Berry, 98.
 Thousand Creek Pliocene, Mammalia: Merriam, 28.
 New Mexico, San Juan County, Reptilia: Gilmore, 4.
 North Carolina, Castle Hayne and Trent marls: Kellum, 2.
 Miocene Mollusca: Mansfield, W. C., 7.
 Pliocene: Mansfield, W. C., 6.
 Oregon, Astoria section: Howe, H. V. W., 9.
 Coast Range, Foraminifera: Cushman, 44.
 Coos Bay, Empire formation: Howe, H. V. W., 2.
 Crooked River basin, *Merychippus*: Maxson, 1.
 Eagle Creek flora: Chaney, C. A., 1.
 eastern, insects: Cockerell, 40.
 fresh-water Mollusca: Hanna, G. D., 6.
 John Day Basin, hyaenarctid bear: Merriam, 24; Mollusca: Hanna, G. D., 2.
 John Day beds, hackberry: Chaney, 18; Umbellularia: Chaney, 19.
 John Day region, Miocene Gastropoda: Hanna, G. D., 4.
 Merychippus isonesus, Crooked River Basin: Maxson, 1.
 Rattlesnake fauna: Merriam, 19.
 Orthaulax: Cooke, C. W., 6.
 Orthophragmina and *Lepidocyclina*: Cushman, 8.

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- Pacific slope, sharks and rays: Jordan, 11.
 stalk-eyed Crustacea: Rathbun, 5.
 Panama Canal Zone: Vaughan, 3.
 Miocene palm nut: Berry, 25.
 Payette flora: Chaney, 6.
 Pelagic mammals: Kellogg, R., 8.
 Pacific coast: Kellogg, R., 10.
 Plantae, catalog: Knowlton, 2.
 Porto Rico, Lares district: Hubbard, B., 3.
 Ponce district: Mitchell, 7.
 Mollusca: Hubbard, B., 1; Maury, 3.
 St. Maurice and Claiborne Pelecypoda: Harris, G. D., 1.
 Snake Creek fauna: Matthew, W. D., 2.
 Rhinoceroses and hyracodonts, early Tertiary: Wood, H. E., 6.
 South Carolina, Mollusca, Miocene: Gardner, J. A., 1.
 Oligocene sea turtles: Hay, 19.
 South Dakota, badlands: Jepson, 1; Toepelmann, 1; Ischromys: Miller, G. S., 1.
 Black Hills region: O'Harra, 3.
 Tennessee, Eocene, caddis case: Berry, 4.
 Terminalia, lower Eocene, southeastern North America: Berry, 76.
 Terrestrial plants: Berry, 42.
 Texas, Bastrop County, Cook Mountain Eocene: Price, W. A., 12.
 Butler salt dome, Midway brachiopod: Gardner, J. A., 6.
 central, Eocene florule: Berry, 56.
 Eocene crabs: Rathbun, 6.
 Eocene Mollusca: Gardner, J. A., 11.
 Jackson Foraminifera: Cushman, 24.
 Miocene vertebrates: Hay, 20.
 southwestern, Eocene Mollusca: Gardner, J. A., 2.
 Wilcox group: Gardner, J. A., 3.
 Trinidad: Harris, G. D., 5.
 echinoids: Jeannet, 1.
 Foraminifera: Hodson, H. K., 2.
 Miocene corals: Vaughan, 38.
 Miocene faunas: Maury, 8.
 Miocene gastropods and scaphopods: Mansfield, W. C., 2.
 Tertiary flora: Berry, 64.
 Uinta Basin, Eocene Mammalia: Peterson, O. A., 1.
 Utah, Green River beds, Eocene birds: Wetmore, 8.
 Stehlinius: Matthew, 17.
 Venericardia, West Coast: Hanna, M. A., 1.
 Veneridae, eastern America: Palmer, K. V. W., 5.
 Virginia, Eocene Mollusca: Palmer, K. V. W., 1.
 Miocene Mollusca: Mansfield, W. C., 7; Turritella: Gardner, J. A., 14.

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Virginia—Continued.

- New Castle, Miocene: Palmer, K. V. W., 2.
 Wasatch and Wind River faunas: Matthew, W. D., 3.
 Washington, Eagle Creek flora: Chaney, C. A., 1.
 Eocene: Weaver, 3.
 Latah flora: Knowlton, 16.
 Lewis County, Eocene Foraminifera: Hanna, G. D., 18.
 Miocene, Paliurus: Berry, 102.
 Oligocene, Crustacea: Withers, 3.
 Olympic Peninsula: Dall, 6.
 Western North America: Hertlein, 2; marine Oligocene: Clark, B. L., 11.
 West Indies, Algae: Howe, M. A., 1.
 Bryozoa: Canu, 1.
 decapod Crustacea: Rathbun, 1.
 Foraminifera: Cushman, 3.
 Mollusca: Cooke, C. W., 1.
 White River formation, North Dakota: Leonard, A. G., 4.
 Wilcox flora: Berry, 41.
 Wyoming, amiid fish, Eocene: Romer, 15.
 Big Horn County, Eocene, flightless bird: Sinclair, 11.
 Bridger formation, Reithroparamys: Matthew, 11.
 Eocene Insecta: Cockerell, 8.
 Eocene turtle: Case, 23.
 Miocene, Palaeocastor: Romer, 10.
 Van Tassel, Miocene: Loomis, 6.

Triassic.

- British Columbia, coral reef fauna: Shimer, 7.
 Connecticut Valley: Troxell, 12.
 Footprints: Abel, 4.
 Continental Triassic beds: Huene, 3.
 Dromatherium and Microconodon: Simpson, G. G., 5.
 Greenland, eastern, ammonites: Spath, 1.
 Scoresby Sound, Rhaetic flora: Harris, T. M., 1.
 Idaho, southeastern: Girty, 10.
 Mammals: Simpson, G. G., 22.
 Nevada: Stanton, 12.
 cestraciont spine: Davidson, P., 1.
 New Jersey, Hypsognathus: Gilmore, 39.
 New Mexico, phytosaur: Mehl, 9.
 Pennsylvania, York County: Wanner, 1, 2.
 Reptilia: Huene, 1.
 Plantae, catalog: Knowlton, 2.
 Texas, Coelophysis: Case, 22.
 fishes: Warthin, 1.
 phytosaur: Case, 24.
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 vertebrates: Case, 16.
 western: Case, 11, 27; cotylosaur: Case, 26.

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Unionid pelecypods, Texas and Arizona :
Reeside, 16.

Upper Triassic: Smith J. P., 3.

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Shinarump conglomerate, cycads :
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Wyoming, Phytosauria: Mehl, 19.
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Antiquity of disease: Moodie, 20.
Bacteria, Permian: Moodie, 16.
Disease, beginnings: Moodie, 9.
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in dinosaurs: Moodie, 28.
Historical sketch: Moodie, 17.
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Mesozoic: Moodie, 15.
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Osteomyelites, Permian: Moodie, 14.
Pachyostosis: Moodie, 24.
Parasitic disease: Bather, 2.
Phytosauria: Moodie, 19.
Pliocene pathology: Moodie, 23.
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Alaska, Alaska Railroad region: Capps, 6.
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northern, Canning River region :
Leffingwell, 1.
Tolstoi district: Harrington, 2.
Arctic coast: O'Neill, 5.
British Columbia, Ainsworth district :
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Kerr, F. A., 1.
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Young, G. A., 1.
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counties: Faribault, 4.
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bell, D. G., 1; Mertie, 4.
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bandowan Lake: Tanton, 9.

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Manganese ore, Boqueron River: Sears, 2.

Historical geology.

Boqueron River: Sears, 2.
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Geology with special reference to the
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Papago country, Arizona: Bryan, 15.

Papoose oil field, Oklahoma: Roark, 2.

Paraffin dirt, Gulf coast oil fields: Brokaw,
1; Shaw, 2.

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Arizona, Jerome district: Fearing, J.
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Bornite-chalcopryrite intergrowth, Brit-
ish Columbia: Uglow, 4.

British Columbia, Hazelton: O'Neill, 1.
Texada Island, Marble Bay mine :
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Butte veins, Montana: Agar, 3; Lind-
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Hinsdale County, mineral zones :
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Columbia River basalt: Shannon, 40.
Copper deposits, Parry Sound, Ontario :
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Granite pegmatites, central Maine :
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Bibliography: Atwood, A. C., 1.

British Columbia, southwestern: An-
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- Geological Survey, work, 1919-22: Ashley, 13.
- Survey: Ashley, 5.
- Topographic and Geologic Survey, report: Pa. T. G. S., 2.

Areas described

- Allentown quadrangle: Miller, B. L., 5.
- Elkton quadrangle: Bascom, 2.
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Bibliography: Howe, J. L., 1.

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Bibliography: Gale, H. S., 1; Hicks, 1, 2.

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Georgia, Cartersville slates: Maynard, T. P., 1.

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- Texas: Gardner, J., 13; Udden, 3, 12.
- Amarillo region: Gould, 1.
- Bastrop County, Eocene: Price, W. A., 12.
- Bexar County: Sellards, 10.
- Blue Ridge salt dome, Fort Bend County: Hager, D. S., 2.
- Brazoria County, West Columbia field: Barton, 2.
- Butler salt dome: Powers, 3.
- coast deposits: Dumble, 2.
- Coastal Plain: Applin, E. R., 1.
- Colorado County: Bailey, T. L., 1.
- Damon Mound oil field: Bevier, 1.
- eastern: Dumble, 1; Renick, 12.
- Gulf Coastal Plain: Dumble, 3; near Rio Grande: Trowbridge, 5.
- Hockley salt dome, Harris County: Deussen, 2.
- McMullen County, Gueydan tuff: Bailey, T. L., 2, 3.
- Medina County: Liddle, 3.
- Palangana salt dome: Barton, 1.
- Panola County: Sellards, 15.
- Potter County: Patton, L. T., 2.
- Reynosa Escarpment: Jones, R. A., 1.
- Reynosa formation: Trowbridge, 9, 10.
- salt domes: Powers, 12.
- San Marcos quadrangle: Brucks, 2.
- Saratoga oil field: Suman, 1.
- southern: Böse, 8; Tatum, 1.
- Stratton Ridge salt dome: Applin, P. L., 1.
- West Point salt dome: DeGolyer, 1.
- Wilcox group: Gardner, J. A., 3.
- Texas section: Dumble, 7.
- Trent marl, age, North Carolina: Kellum, 1.
- Trinidad: Liddle, 4; Macready, 1; Milner, 1; Waring, 6.
- Naparima region: Illing, 1.
- southern: Carlson, 2.
- Utah: Butler, 4; Keyes, 152.
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- San Juan Islands: McLellan, 2.
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- Spokane area: Pardee, 11, 12.
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- West Indies: Vaughan, 17, 22.
- White River formation, North Dakota: Leonard, A. G., 4.
- Wyoming, Cody region: Hewitt, 4.
- Fremont County, Big Sand Draw: Collier, 5.
- Gillette coal field: Dobbin, 3.
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- Sweetwater County: Sears, 4; Green River formation: Bradley, W. H., 5.
- Wind River Mountains: Condit, 4.
- Yukon, Sixtymile and Ladue rivers area: Cockfield, 5.
- Zeolite beds in the Green River formation: Bradley, W. H., 8.

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- Bureau of Economic Geology activities: Sellards, 28; Udden, 21.
- Chemical analyses of rocks and minerals: Schoch, 1.
- Geology of dam sites in western Texas: Patton, L. T., 3.
- Identification of geological formations: Udden, 3.
- Red River boundary: Glenn, 8.
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- Bexar County: Sellards, 10.
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- Potter County: Patton, L. T., 2.
- Ranger oil field: Reeves, F., 2.
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- Economic geology.*
- Alkali lakes, western Texas: Meigs, 1.
- Alunite, south central Texas: Braun, 1.
- Amarillo district, oil and gas: Harrison, T. S., 1.
- Asphalt, Anacacho formation: Baker, C. L., 9.
- Austin formation in San Antonio oil fields: Sellards, 14.
- Balcones and Mexia faulting, mechanics: Foley, 2.
- Barbers Hill oil field, Chambers County: Bevier, 2.
- Batson oil field, Hardin County: Sawtelle, 1.
- Bend series, water problems: Fuller, M. L., 1.
- Bethany gas pool: Hull, 5.
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- Big Hill salt dome, Matagorda County: Wolf, 5.
- Big Lake oil field, Reagan County: Sellards, 21.
- Big Lime, stratigraphic position: Edwards, E. C., 2.
- Blue Ridge salt dome, Fort Bend County: Hager, D. S., 2.
- Borings for potash, Midland County: Sellards, 26.
- Bryan Heights salt dome, Brazoria County: Kennedy, 1.
- Buried ridges, western Texas: Powers, 24.
- Chemical analyses of rocks and minerals: Schoch, 1.
- Clay Creek dome, Washington County: Lahee, 20.
- Currie oil and gas field, Navarro County: Lahee, 10, 19.
- Damon Mound oil field: Bevier, 1.
- Deep Creek oil field: Wade, A., 1.
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- Faulting and petroleum accumulation at Mexia: Pratt, W. E., 9.
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 Lytton Springs oil field, Caldwell County: Brucks, 2; Bybee, 2; Collingwood, 8.
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- White Point gas field, San Patricio County: Wolf, 3.
- Wortham and Lake Richland faults: Lahee, 16.
- Yates pool, Pecos County: Metcalf, R. J., 1.

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- Amarillo region: Gould, 1.
- Archer County: Hubbard, W. E., 1.
- Austin formation in San Antonio oil fields: Sellards, 14.
- Balcones fault region: Udden, 8.
- Barbers Hill oil field, Chambers County: Bevier, 2.
- Barnett shale, age: Moore, R. C., 16.
- Batson oil field, Hardin County: Sawtelle, 1.
- Bend formation: Girty, 1.
- Bend series, age: Girty, 2.
- and contiguous formations: Goldman, 8.
- Brown County: Waite, 1.
- central Texas: Moore, R. C., 2.
- Bexar County, subsurface Cretaceous: Jones, R. A., 7.
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- Big Bend area: Tex., Atty. Gen., 1.
- Big Hill salt dome, Jefferson County: Henley, 1.
- Big lime, western Texas, stratigraphic position: Edwards, E. C., 2.
- Big salt dome, Matagorda County: Wolf, 5.
- Big Lake oil field, Reagan County: Sellards, 21.
- Bissett formation, Glass Mountains: King, 4.
- Blanco and associated formations: Matthew, 30.
- Blue Ridge salt dome, Fort Bend County: Hager, D. S., 2.
- Borings, Colorado County: Bailey, T. L., 1.
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- Lytton Springs oil field: Bybee, 2.
- potash, Midland County: Sellards, 26.
- Palo Pinto County: Goldman, 8.
- Panola County: Sellards, 15.
- Potter County: Patton, L. T., 2.
- Webb and Zapata counties: Sellards, 13.
- Bryan Heights salt dome, Brazoria County: Kennedy, 1.
- Butler salt dome, Freestone County: Powers, 3.
- Canadian River valley: Patton, 6.
- Carboniferous, north central Texas: Gould, 13.
- Cavern deposits in Permian: Udden, 13.
- Central Texas oil fields: Matteson, 1.
- Coastal Plain: Applin, E. R., 1.
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- Coral reefs in Oligocene: Ellisor, 3.
- Cretaceous: Hill, R. T., 3, 5; Scott, G., 2; Stanton, 13.
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- correlation: Scott, G., 4.
- western Texas: Baker, C. L., 2.
- Cretaceous and Tertiary, southern Texas: Böse, 8; Tatum, 1.
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- University Block: Beede, 8.
- Currie structure, Navarro County: Lahee, 19.
- Damon Mound oil field: Bevier, 1.
- Diablo Plateau: Beede, 3.
- Eagle Ford formation: Moreman, 2.
- Eastern Texas: Dumble, 1; Renick, 12.
- Eastland and Stephens counties: Adams, H. H., 1.
- Ellenburger formation, north central Texas: Sellards, 9, 11.
- Fredericksburg and Washita formations, northern Texas: Adkins, 1.
- Gaptank-Wolfcamp problem, Glass Mountains: Keyte, 2.
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- Geologic map: Currier & Company, 1.
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- Glass Mountains, west Texas: King, 2, 6.
- Glenn formation, north central Texas: Goldston, 2.
- Goose Creek oil field, Harris County: Minor, 2.
- Guadalupe group: Darton, 19.
- Gueydan tuff, McMullen County: Bailey, T. L., 2, 3.
- Gulf coast: Schander, 1.
- Gulf Coastal Plain: Dumble, 3.
- Hockley salt dome, Harris County: Deussen, 2.
- Hudspeth County, Carboniferous formations, correlation: Beede, 5.
- Igneous rock in wells in Panhandle: Donoghue, 1.
- Interior salt domes: Powers, 17.
- Lithologic correlation in "Bend" series: Goldman, 5.
- Llano-Burnet and Marathon uplifts: Powers, 26.
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- Lower Cretaceous or Comanche series: Bullard, 4; Stanton, 14.
- Luling oil field, Caldwell and Guadalupe counties: Brucks, 1.
- Lytton Springs oil field, Caldwell County: Bybee, 2; Collingwood, 8.
- McLennan County: Pace, 1.
- Malone formation: Kitchin, 1.
- Marathon basin, trans-Pecos Texas: Baker, C. L., 10.
- Marathon fold, northwest Texas: Hassan, 1; Liddle, 1.
- Marine Wilcox: Dumble, 4.
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- Midway formation: Plummer, 5; stratigraphic position: Gardner, J. A., 9.
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 Northeast Texas, petroleum area: Fohs, 2.
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 Palangana salt dome, Duval County: Barton, 1.
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 South Dayton salt dome, Liberty County: Bowman, 1.
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 Spindletop salt dome, Jefferson County: Barton, 5.
 Stratton Ridge salt dome, Brazoria County: Applin, P. L., 1.
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- Tertiary: Gardner, J. A., 13.
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- Analcite, Brewster County: Lonsdale, 12.
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- Ammonites, Cretaceous: Scott, G., 6.
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- Fort Worth area: Winton, H., 1.
- Fossil footprints near Abilene: Gould,
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- Gerontic ammonites, Duck Creek for-
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- Permo-Carboniferous ammonoids, Glass
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- Tortoises, Brazos River: Hay, 18.
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- Turritella, Buda and Georgetown lime-
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- Vertebrate faunal horizons, Permo-
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- Weichselia, Cretaceous: Berry, 95.
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- Asphalt, Anacacho formation: Baker, C. L., 9.
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Coke County, geologic structure: Beede, 2.
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- Sandstone dikes, Rockwall: Patton, 5; Stephenson, 7.
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- Bend series, water problems: Fuller, M. L., 1.
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Textbooks.

- Agricultural geology: Emerson, F. V., 3.
Chemical analysis of rocks: Washington, 1.
Determinative mineralogy: Lewis, 4.
Earth and its history: Bradley, J. H., jr., 5.
Earth history: Shimer, 4.
Economic geology: Emmons, W. H., 3; Ries, 10.
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Geology applied to mining: Spurr, 24.
Geology manual: Field, 6.
Handbook for field geologists: Hayes, C. W., 1.
Introduction to geology: Miller, W. J., 24.
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Mineralogy and geology: Herrera, 1.
Oil field geology: Hager, D., 1.
Petroleum geology, field methods: Cox, G. H., 1.
Physical geography: Tarr, R. S., 1.

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- Physical geology: Miller, W. J., 22, 32.
 Physiography: Salisbury, 1; Scott, W. B., 1.
 Principles of stratigraphy: Grabau, 13.
 Rocks and rock minerals: Pirsson, 6.
 Structural geology: Leith, 9.

Thermal currents in oil accumulation: Pepperberg, 1.

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